

2001-2002



Heal the Bay's 12th Annual Beach Report CardSM



May 23, 2002



Heal the Bay is a nonprofit environmental organization dedicated to making Santa Monica Bay and Southern California coastal waters safe and healthy for people and marine life. We use research, education, community action and policy programs to achieve this goal.

The Beach Report Card program is funded by a grant from the

Ford Motor Company

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Executive Summary

HEAL THE BAY'S 12TH ANNUAL Beach Report CardSM provides essential water quality information to the millions of people who swim, surf, or dive in California coastal waters. Essential reading for ocean users, the report card grades 394 locations year-round (more than 420 locations in dry weather) on an A-F scale based on the risk of adverse health effects to humans. The grades are based on daily and weekly bacterial pollution levels in the surfzone. The program has developed from an annual review of beaches in Santa Monica Bay to weekly updates of beaches throughout California. All this information is available in print and at www.healthebay.org.

The 2001-2002 Annual Beach Report Card demonstrated that most beaches had very good water quality with 275 of 394 (70%) locations receiving "A" grades. Also, there were 53 (13%) "B"s, 24 (6%) "C"s, 16 (4%) "D"s and 26 (7%) "F"s. Numerous California beaches vied for the "Beach Bummer" crown this year (the monitoring location with the poorest dry weather water quality). The bottom 10 finalists were: Surfrider Beach at Malibu in Los Angeles County, (10th), Shelter Island (Shoreline Beach Park) at San Diego Bay in San Diego County, (9th), Campbell Cove State Park Beach at Bodega Bay in Sonoma County, (8th), East Beach at Mission Creek in Santa Barbara County, (7th), Channel Island Harbor Beach Park (Hobie & Kiddie Beach) in Ventura County, (6th), Baby Beach at Dana

Point Harbor in Orange County, (5th), Pacific Beach at P.B. Point (downcoast of Linda Way) in San Diego County, (4th), and the Visitor's Center (projection of Clairemont Drive) at Mission Bay in San Diego County, (3rd). This year there were co-winners of the dubious California "Beach Bummer" crown: Doheny Beach at Dana Point in Orange County (T-1st), and Arroyo Quemada in Santa Barbara County (T-1st). Arroyo Quemada once again laid claim to the crown because 75% of the monitoring days exceeded at least one fecal bacteria indicator. Doheny Beach (North Doheny Beach to 5,000 feet south of San Juan Creek) was awarded the co-crown based on the beach area degraded (a one mile stretch of beach) by poor water quality and the number of annual visitors to the beach.

This year's relatively dry rainy season accounted for better-than-average wet weather water quality. However, a great disparity in water quality still remains between dry and wet weather conditions. Many counties (predominantly those north of Santa Barbara County) do not maintain their water quality monitoring program throughout the year, severely reducing or completely discontinuing the program between November and March. Of the 268 locations that are monitored, 107, or 40%, received very-good-to-excellent water quality marks during wet weather, while 161 locations received fair-to-poor water quality

marks. Overall, 40% of the monitoring locations received a grade of "F" during wet weather compared to only 7% during dry weather.

Once again, Heal the Bay completed an analysis of Southern California data (Santa Barbara County to San Diego County) to determine if there were significant differences in water quality based on beach type. From our analysis, water quality at open-ocean beaches was dramatically better than those beaches impacted by storm drains or located within enclosed bays or harbors.

Approximately 93% of open ocean beaches received an "A" grade during dry weather compared to 73% at beaches impacted by a storm drain and 43% at beaches found within an enclosed bay, harbor or marina.

Despite the state's recent economic slowdown, Governor Davis and voters continue to make beach water quality a priority for California by investing in the protection of this resource. Last year the Governor proposed in the state budget \$34 million for a Clean Beach Initiative to protect and restore the health of California's beaches. This is the first significant allocation of funds to protect the health of the 100 million people who visit California's beaches each year. Following the Governor's lead, voters passed Proposition 40, a \$2.6 billion program to provide clean, safe drinking water, clean beaches and coastal waters, improve state and neighborhood parks, protect wildlife and open

"Beach Bummer" Locations

- **Arroyo Quemada, Santa Barbara County/Doheny State Beach, Dana Point**
- **Visitor Info Center, Mission Bay, San Diego**
- **Pacific Beach Point, San Diego**
- **Baby Beach, Dana Point Harbor, Dana Point**
- **Hobie & Kiddie Beaches, Channel Islands Harbor, Ventura**
- **East Beach at Mission Creek, Santa Barbara**
- **Campbell Cove State Park Beach, Bodega Bay**
- **Shelter Island, Shoreline Park Beach, San Diego Bay**
- **Surfrider Beach, Malibu**

space, and achieve better air quality. Specifically, \$375 million is set aside for watershed protection, clean beaches, rivers and streams.

The Beach Report Card is based on the routine monitoring of beaches conducted by local health agencies and dischargers. Water samples are analyzed for bacteria that indicate pollution from numerous sources, including fecal waste. The higher the grade a beach receives, the lower the risk of illness to ocean users. The report is not designed to measure the amount of trash or toxins found at California beaches. The Beach Report Card would not be possible without the cooperation of all of the shoreline monitoring agencies in the state.

Heal the Bay believes the public has the right to know the water quality at their favorite beaches, and is proud to provide Californians this information in an easy-to-understand format.

We hope that California beachgoers will use the information to decide what they are most comfortable with in terms of relative risk, and then make the necessary decisions to protect their health.

County health officials and Heal the Bay recommend that beach users never swim or surf within 100 yards of any flowing storm drain, or in any coastal water during, and for three days after, a rainstorm. Storm drain runoff can be the greatest source of pollution to local beaches, flowing untreated to the coast and often contaminated with motor oil, animal waste, pesticides, yard waste and trash. After a rain, indicator bacteria counts usually far exceed state health criteria for recreational water use.

For more information, please log on to www.healthebay.org, or call 1-800-HEAL BAY.

Introduction

THE FIRST BEACH REPORT CARDSM (BRC) Heal the Bay published in 1990 covered 60-plus monitoring locations in Los Angeles County from Leo Carrillo Beach to Cabrillo Beach. At the time, beachgoers knew little about the health risks of swimming in polluted waters or the water quality at any of their favorite beaches in Los Angeles County. Beach water quality was a public issue only when a substantial sewage spill occurred. Although beaches were routinely monitored, the data was either largely inaccessible or unusable to the public. Since then, much work has been done to address the issue of urban runoff and sewage spills at our local beaches. Scientific studies such as the Santa Monica Bay Restoration Project's Epidemiological Study on swimmers at runoff polluted beaches and the Southern California Coastal Waters Research Project's bight-wide shoreline bacteria and laboratory inter-calibration study have been completed. Legislation, such as the statewide beach bathing water standards and public notification bill (AB411), and the protocol for identi-

fying sources of fecal indicator bacteria at high-use beaches that are impacted by flowing storm drains (AB538) have been passed and implemented. Capital developments, such as the upgrade of the Hyperion Sewage Treatment Plant, dry weather diversions, and Clean Beach Initiative projects have been constructed. In this same time period, Heal the Bay's Beach Report Card has grown in coverage, expanding from Los Angeles County to all of California (where monitoring programs exist), and is now essential reading for the beachgoing public.

The 12th Annual BRC summarizes the results of beach water quality monitoring programs throughout California, from Sonoma County to San Diego County, over the last 12 months (April 2001 - March 2002). The summary includes an analysis of water quality during dry and wet weather conditions, a brief review of proposed Clean Beach Initiative projects, and a review of the number of sewage spills which impacted recreational waters over the past year. The information derived from this analysis

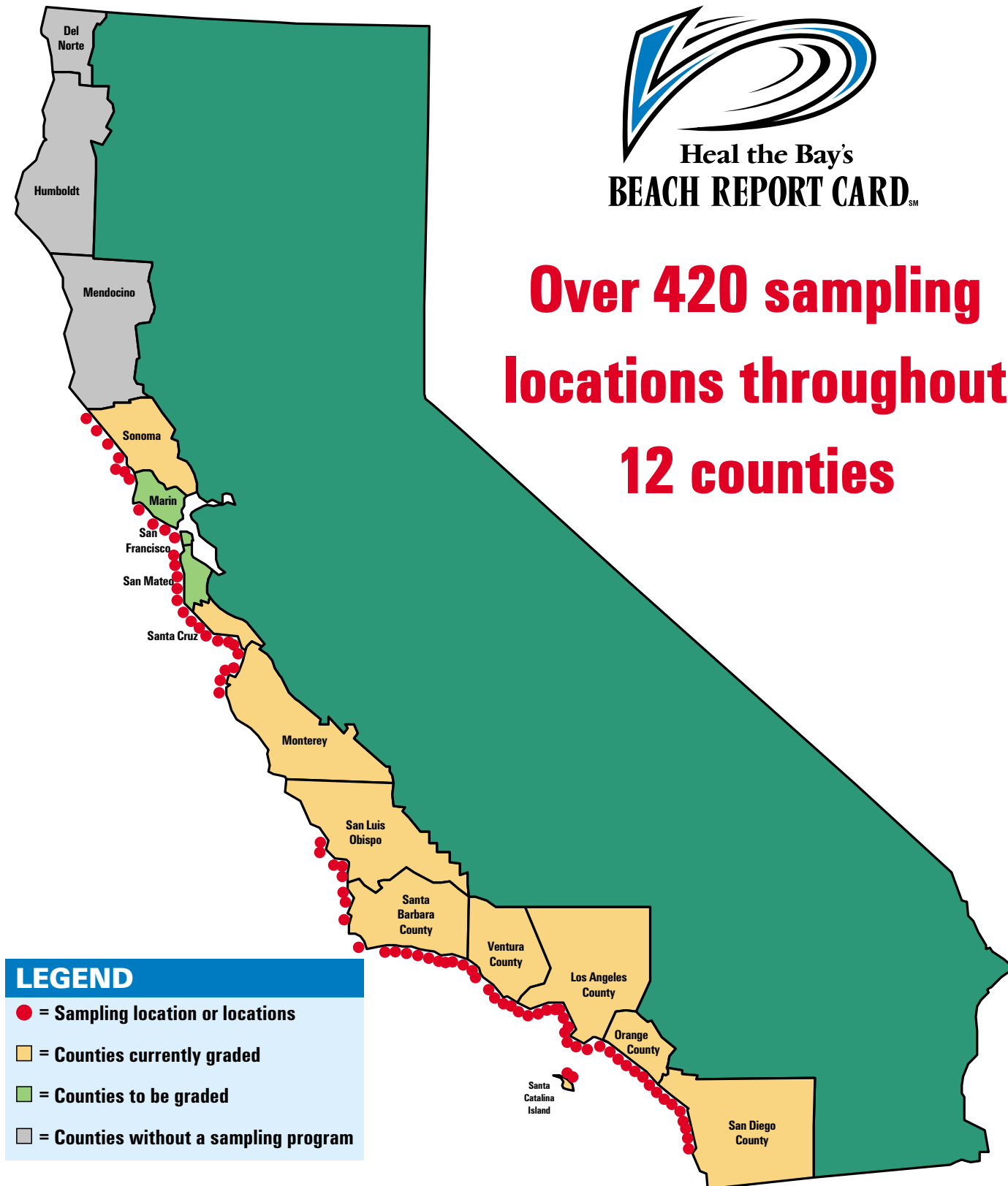
is used to develop recommendations for solving water quality impairments at problem beaches. The report also includes updates on issues that have an impact on beach water quality, such as legislation, regulatory programs and scientific studies. The updates are followed by Heal the Bay's recommendations for the coming year for improving water quality and expanding public education.

The BRC now covers 394 locations (420-plus under certain conditions) from Sonoma County to San Diego County on a weekly basis, updated every Friday. Heal the Bay hopes that California beachgoers will use the information before they go to any beach in the state, in order to better protect their health and the health of their families. The weekly California BRC will be available in print and at Heal the Bay's web site, www.healthebay.org.

The Report Card should be used like the SPF ratings in sunblock – beachgoers should determine what they are comfortable with in terms of relative risk, and then make the necessary decisions to protect their health.



**Over 420 sampling
locations throughout
12 counties**



The California Beach Report Card

What Type of Water Quality Pollution is Measured?

Runoff from creeks, rivers and storm drains is the largest source of pollution to California beaches. Runoff may contain toxic heavy metals, pesticides, petroleum hydrocarbons, animal waste, trash and even human sewage. The Beach Report Card includes an analysis of shoreline (ankle-deep) water quality data collected by various county and city public agencies for fecal indicator bacteria. At present, the report card contains no information on toxins or trash in the water.

Currently, there are over 420 shoreline monitoring locations analyzed in the California Beach Report Card — from Sonoma County at Gualala Regional Park Beach south to San Diego County at the Border Field State Park (border fence). Shoreline water samples are analyzed for three indicator bacteria: total coliform, fecal coliform and enterococcus. Total coliform, which contains coliform of all types, originates from many sources, such as soil, plants, animals and humans. Fecal coliform and enterococcus bacteria are found in the fecal matter of mammals and birds. This fecal matter does not necessarily come from humans, although numerous prior studies have demonstrated that there is a significant possibility of human sewage contamination in storm drain runoff at any given time.

The amount of indicator bacteria present in runoff, and consequently in the surfzone, is currently the best

indication of whether or not a beach is safe for recreational contact.

Indicator bacteria are not usually the microorganisms that cause bather illness. Instead their presence indicates the potential for water contamination with other pathogenic microorganisms such as bacteria, viruses and protozoa that do pose a health risk to humans. The link between swimming in waters containing elevated levels of bacteria indicators and health risk was confirmed in the groundbreaking 1996 Epidemiological Study conducted by USC, the Orange County Sanitation District, the City of Los Angeles, and Heal the Bay, under the auspices of the Santa Monica Bay Restoration Project.

Most sample locations are selected by monitoring, health, and regulatory agencies to specifically target popular beaches and/or those beaches frequently affected by runoff. Water quality samples were collected by the appropriate agency at a minimum of once a week from April through October, as required under AB411. Many agencies conducted year-round sampling, while others scaled back their monitoring program from November through March. All counties that have beach monitoring programs and provide the data to the public were included in the Report Card.

Water Quality Thresholds

Concentrations of total coliform, fecal coliform and enterococcus bacteria are typically measured in colony-forming units (cfu) per 100 milliliters

of ocean water. Colony-forming units are the number of bacteria in a given volume of ocean water that are capable of reproduction during the course of sample analysis. The Beach Report Card methodology utilizes four thresholds, or specific levels of exposure, that are associated with increased health risks. These thresholds were derived from California Department of Health Services standards set forth in AB411 and findings from the 1996 SMBRP Epidemiological Study on swimmers at urban runoff polluted beaches. The four exceedance thresholds for various indicator bacteria can be found in Appendix A.

Heal the Bay's Grading System

Heal the Bay's grading system takes into consideration the magnitude and frequency of an exceedance above indicator thresholds over the course of a year. Furthermore, those beaches that exceed multiple indicator thresholds in a given day received lower grades than those beaches that exceeded just one indicator threshold.

The grades are based on a 100-point scale. For each monitoring location, points are subtracted from a perfect score of 100 points depending upon where the data falls within the designated thresholds. As the magnitude or frequency of bacteria density threshold exceedance increases, the number of points subtracted increases. The threshold points and grading system can be found in Appendix A.

Water quality drops dramatically during and immediately after a rainstorm, but often rebounds to its previous level within a few days. For this reason, wet weather data was analyzed separately in order to avoid artificially lowering a location's grade. A wet weather data point is any sample collected during or for three days following a rainstorm. Heal the Bay's annual report card and weekly report cards utilized a definition of a significant rainstorm as precipitation more than or equal to one tenth of an inch (≥ 0.1 "). Also, in response to requests from health agency officials, the BRC now analyzes dry weather water quality data for two time periods, 1) April 2001 to October 2001 (AB411 time period), and 2) April 2001 to March 2002.

What does this mean to the beach user?

Simply put, the higher the grade a beach receives, the better the water quality at that beach. The lower the grade, the greater the health risk. Potential illnesses include stomach flu, ear infection, upper respiratory infection and major skin rash (full body). The known risks of contracting illnesses associated with each threshold are based on a one-time, single day of exposure (head immersed while swimming) in polluted water. Increasing frequency of exposure or the magnitude of bacteria densities may significantly increase an ocean user's risk of contracting any one of a number of these illnesses.

It is important to note that the grades derived for the California Beach Report Card represent the most current available information to the public, but they do not represent real-time water quality conditions. Currently, laboratory analyses of beach water quality samples take 18 to 48 hours to complete, then the data must be entered into a database before it is sent to Heal the Bay for a grade calculation. However, the Report Card on the Heal the Bay web site includes real-time information on beach closures because most closures are due to sewage spills and all health agencies close beaches immediately after a spill. The Report Card is designed to give the beachgoer historical information on the water quality at a given beach. The public can then make informed decisions about which beach to visit.

Why not test for viruses?

A common question asked by beachgoers is "Since viruses are thought to cause many of the swimming associated illnesses, why doesn't the health agency monitor directly for viruses rather than bacteria indicators?" Although virus monitoring is incredibly useful in identifying sources of fecal pollution, there are a number of drawbacks to the currently available virus measurement methods. There have been tremendous breakthroughs in the use of gene probes to analyze water samples for virus or human specific bacteria, but currently these techniques are expensive, highly tech-

nical and not very quantitative. There are two virus monitoring techniques for analyzing water samples, genetic and cultured. The genetic technique for detecting viruses can be completed in less than a day and is very sensitive to detecting a wide variety of viral pathogens. However, the tests are extremely expensive (about \$1,000 per sample) and the results do not accurately quantify the number of viruses per unit volume or provide information on whether or not the virus is infectious. The culture technique for detecting viruses is less costly (about \$400 per sample) and can confirm whether or not a virus is infectious. Unfortunately, this technique is less sensitive in detecting viruses, is susceptible to water-quality-caused interference, and much slower in obtaining results (up to 6 weeks), unlike bacterial indicator analyses, which require only 18-48 hours. Finally, interpretation of virus monitoring data is difficult because, unlike bacteria indicators, there is currently no data available that links health risks associated with swimming in beach water to virus concentrations. Therefore, indicator bacteria monitoring is currently the best, most timely and cost effective method for protecting the health of beachgoers. Since bacteria indicator analyses cost about \$30 dollars for every sample, for every one water sample analyzed for viruses, 15-30 water samples can be analyzed for bacterial indicators for the same cost.

2001-2002 Analyses

California Beaches

The overall dry weather water quality at California beaches this year was very good. Of the 394 water quality monitoring locations throughout California, 328, or 83%, of the monitoring locations during dry weather received good-to-excellent water quality marks (see Table 1 and Table 2). Since the BRC expanded beyond Los Angeles County three years ago, this year's 83% ranks as the best year to date for Southern California. The improved water quality could be attributed to the combination of a record dry winter and the implementation of a number of dry weather diversions. There were 66 locations that received fair-to-poor water quality marks. A list of all the grades can be found in Appendix B. The results demonstrate that, for 2001-2002, the data during the summer was very similar to the year-round dry weather results.

A number of California beaches vied for the "Beach Bummer" crown this year for the monitoring location with the poorest dry weather water quality. All but one of the finalists were in Southern California. The bottom 10 finalists were: Surfrider Beach at Malibu in Los Angeles County, (10th), Shelter Island (Shoreline Beach Park) at San Diego Bay in San Diego County, (9th), Campbell Cove State Park Beach at Bodega Bay in Sonoma County, (8th), East Beach at Mission Creek in Santa Barbara County, (7th), Channel Island Harbor Beach Park (Hobie & Kiddie

Beach) in Ventura County, (6th), Baby Beach at Dana Point Harbor in Orange County, (5th), Pacific Beach at P.B. Point (downcoast of Linda Way) in San Diego County, (4th), the Visitor's Center (projection of Clairemont Drive) at Mission Bay in San Diego County, (3rd), Doheny Beach at Dana Point in Orange County, (2nd). The co-winners of the dubious California "Beach Bummer" crown were Doheny Beach at Dana Point in Orange County (T-1st), and Arroyo Quemada in Santa Barbara County (T-1st). Arroyo Quemada laid claim to the crown this year because 75% of the monitoring days exceeded at least one fecal bacteria indicator. Doheny Beach (North Doheny Beach to 5,000 feet south of San Juan Creek) was awarded the co-crown based on the beach area degraded (a one mile stretch of beach) by poor water quality and the number of annual visitors to the beach.

The perpetual disparity between dry and wet weather grades was dramatic once again. This drastic difference in water quality is why Heal the Bay and public health agencies continue to recommend that no one swim in the ocean during, and for at least three days after, a significant rainstorm. Very few beach locations in California escape the influence of polluted stormwater runoff. There were 107 monitoring locations (40%) that received a grade of "F" during wet weather compared to only 7% during dry weather (see Table 1 and Table 2).

2001-2002 Annual Beach Report Card Overall Results

Table 1

Number of Grades by Time Period for California Beaches

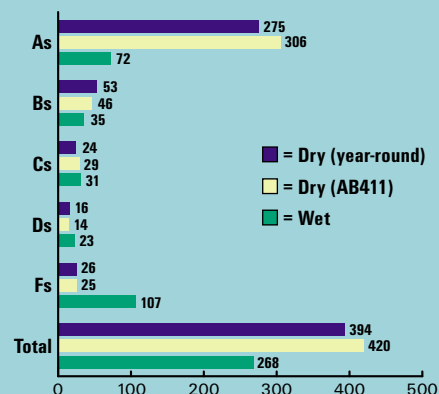
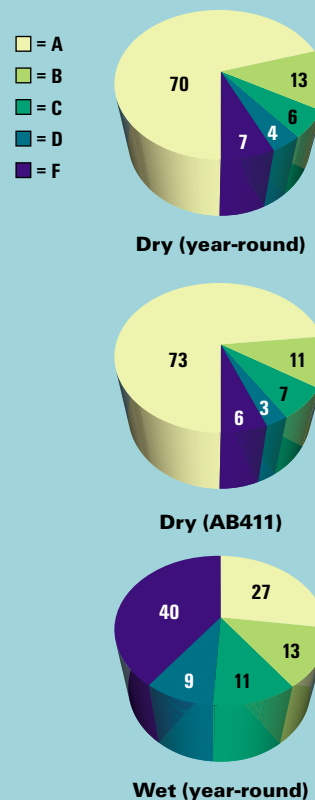


Table 2

Percentage of Grades by Time Period for California Beaches



Heal the Bay strongly commends the many agencies that continued their monitoring programs beyond the AB411 required dates of April through October. This action provided approximately 20 additional weeks of water sampling, which meant beachgoers, particularly surfers going

out for the winter swells, could continue receiving information about water quality and have the ability to make better health risk decisions about which beaches to visit.

Currently there are three coastal counties – Del Norte, Humboldt, and

Mendocino – which are not covered in this annual report because they do not have beaches that meet the AB411 requirements – beaches that have over 50,000 visitors annually and are affected by a flowing storm drain, river, or creek.

The Beach Report Card by County

SONOMA

The County of Sonoma, Environmental Health Division monitors approximately seven locations on a weekly basis from April through October, from as far upcoast as Gualala Regional Park Beach to a downcoast location at Doran Regional Park Beach in Bodega Bay. Samples are collected 25 yards north or south of the mouth of a storm drain or creek.

Dry weather water quality at most beaches in Sonoma County was excellent, with six of the seven monitoring locations receiving "A"s. The only problem area in Sonoma County was at Campbell Cove State Park Beach. Located at the entrance to Bodega Harbor in Bodega Bay, Campbell Cove received an "F" water quality mark.

Given that Sonoma County only monitors from April through October, there was an insufficient amount of wet weather data for analysis.

Clean Beach Initiative Summary

Sonoma County applied for and was awarded a Clean Beach Initiative (CBI) grant this year for \$500,000 to complete a source identification study and a tidal circulation study to determine the factors contributing to the poor water quality at Campbell Cove and to implement corrective actions.

Sewage Spill Summary

There were zero (0) reported sewage spills in Sonoma County that led to beach closures.

MARIN

Currently, the County of Marin, Environmental Health Services does not have a shoreline water quality monitoring program associated with AB411. Potential monitoring locations where information could be collected include such popular locations as Dillon Beach, Bolinas, Stinson Beach, Muir Beach, Cronkite Beach, and Drakes Beach. Heal the Bay, the County of Marin, Environmental Health Services, Assemblymember Joe Nation's office, and Assemblymember Howard Wayne's office have been working for the past year to obtain funding from the California Department of Health Services to implement the County's AB411 program. The County of Marin's AB411 monitoring program is expected to be funded this summer due to the passage of Proposition 40 in California and the distribution of \$535,000 from the United States Environmental Protection Agency's BEACH program to California's shoreline water quality monitoring programs.

Sewage Spill Summary

There were zero (0) reported sewage spills in Marin County that led to beach closures.

SAN FRANCISCO

The City and County of San Francisco have a unique stormwater infrastructure that occurs in no other California coastal county – a combined sewer and storm drain system

(CSS). The benefit of such a system, as long as the system is not overloaded, is that everything that goes down the sink or storm drain gets treated before being discharged through a designated outfall. However, when the system is overloaded, usually due to heavy rain, the CSS discharges both partially treated urban runoff and sewage waste water. In an effort to reduce the number of combined sewer overflows, the County and City have implemented a system of underground storage systems to handle major rain events without impacting the CSS. Because of the CSS, the County of San Francisco is not required to have an AB411 monitoring program, because the county technically has no flowing storm drains throughout the year.

There are two shoreline water quality monitoring programs in the county: 1) County of San Francisco, Environmental Health Department, and 2) the San Francisco Public Utilities Commission (PUC). The Environmental Health Department collects water samples at 10 locations twice a month and at 29 locations once a month. The PUC's monitoring program is required under their National Pollutant Discharge Elimination System (NPDES) permit, and augments the County's monitoring program. The PUC is required to monitor 9 locations located on the ocean side of the peninsula, a minimum of three times per week.

Unfortunately, Heal the Bay was unable to analyze any of the data collected by either of the agencies because the data was inadequate. The

2001-2002 Annual Beach Report Card — Santa Cruz County

Table 3

Number of Grades by Time Period for Santa Cruz Beaches

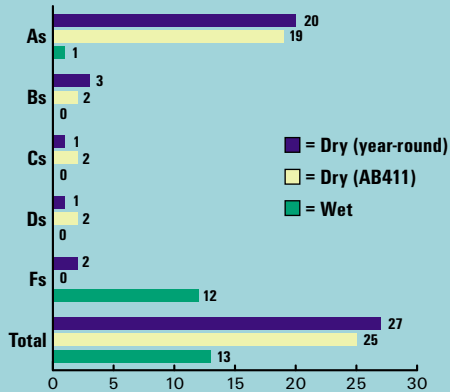
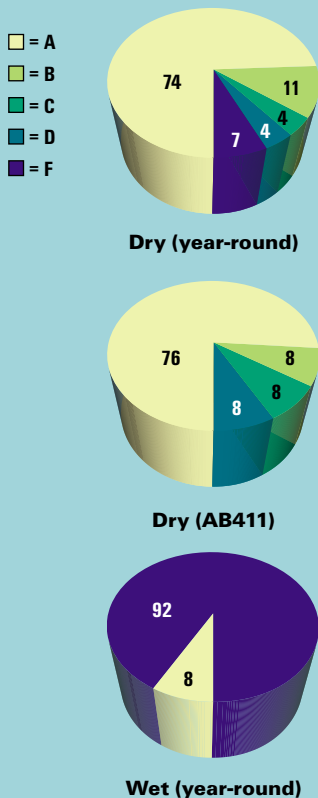


Table 4

Percentage of Grades by Time Period for Santa Cruz Beaches



County Environmental Health Department's bi-monthly sampling efforts were too infrequent to derive enough samples to determine any accurate picture of beach water quality. Both monitoring programs were inadequate because they only monitor for total coliforms and/or E.coli. For marine waters, the State recommends monitoring for three indicator bacteria (total coliform, fecal coliform, and enterococcus), and EPA recommends, at a minimum, the indicator bacteria enterococcus, not total coliform, for water quality monitoring. In summary, with such popular beaches as Ocean Beach, China Beach, and Aquatic Park, and the state's second largest metropolitan area, the swimming public is not adequately informed or protected from the risks of poor beach water quality.

Sewage Spill Summary

There were zero (0) reported sewage spills in San Francisco County that led to beach closures.

SAN MATEO

The County of San Mateo, Environmental Health Department monitors approximately 20 locations on a weekly basis, from as far upcoast as Sharp Park Beach in Pacifica to a downcoast location of Gazo's Beach at Gazo's Creek. The Health Department utilizes volunteers from the local Surfrider Foundation chapter to assist in the collection of water samples. Samples are collected at a distance of 25 yards north or south of the mouth of a storm drain or creek. Although the County has a shoreline water quality monitoring program, very little data was made available to Heal the Bay for our Annual Report

Card analysis.

Clean Beach Initiative Summary

Despite having very little monitoring data for review, the County of San Mateo and the City of Pacifica have received grants totaling \$750,000 from the CBI to reduce water quality problems at Pilarcitos Creek, Gazo's Creek, and at Pacifica State Beach. The County will begin work on a pilot project for the Gazo's Creek watershed to identify potential sources of bacterial contamination, map known sources, implement appropriate best management practices, and take enforcement action on illegal dischargers. The City of Pacifica plans to implement a dry weather diversion project for the San Pedro Creek. The runoff flow from developments would be rerouted from San Pedro Creek to an artificially created wetland.

Sewage Spill Summary

The County did not provide Heal the Bay with a summary of beach closures due to sewage spills.

SANTA CRUZ

The County of Santa Cruz, Environmental Health Services monitors approximately 31 shoreline locations, of which 14 are monitored year-round and 17 on a periodic basis during dry weather from April through October. The monitoring locations range from as far upcoast as Waddell Creek Beach at Waddell Creek near Big Basin Redwood Park to a downcoast location at Palm Beach, near the Pajaro River. Most samples are collected at the wave wash (where runoff meets surf), or 25 yards north or south of the mouth of a storm drain or creek.

Dry weather water quality at most

beaches in Santa Cruz County was very good. Of the 27 water quality monitoring locations, 85% (see Table 3 and Table 4) of the locations received very-good-to-excellent water quality marks. Some of the cleanest beaches were at Natural Bridges State Beach, Cowell Beach, Santa Cruz Main Beach, Seabright Beach, Seacliff State Beach, and Palm Beach. The two areas that received fair-to-poor water quality marks were Capitola Beach and Rio Del Mar Beach. Three of the four monitoring locations at Capitola Beach received a grade of "D" or lower during dry weather.

Unfortunately, wet weather water quality in Santa Cruz County was poor. This year, 12 of the 13 locations with wet weather data received an "F." With some of the largest waves occurring during wet weather, the 92% beach failure rate should serve as a warning to surfers who enter the water during or within three days of a rain.

Clean Beach Initiative Summary

The City of Capitola will receive a \$100,000 CBI grant to divert storm drain flows from Capitola Beach to the sanitary sewer. The City of Santa Cruz will spend approximately \$1.5 million in grant funds to improve wastewater infrastructure and install dry weather diversions for Main Beach, Cowell Beach, and Seabright Beach.

Sewage Spill Summary

There were two reported sewage spills in Santa Cruz County that led to beach closures. The two spills were located at Capitola Beach and Twin Lakes/Seabright Beach. The volume

of the spills was unknown.

MONTEREY

The County of Monterey, Environmental Health Agency monitors eight locations on a weekly basis from April through October, from as far upcoast as the Monterey Beach Hotel at Roberts Lake in Seaside to a downcoast location of Carmel City Beach in Carmel by the Sea. From November to March, the beaches are monitored just once a month.

Dry weather water quality at most beaches in Monterey County was very good. Of the eight monitoring locations, seven locations, or 87%, received very-good-to-excellent water quality marks (four "A"s and three "B"s). The cleanest beaches were the Monterey Beach Hotel, Asilomar State Beach, Spanish Bay (Moss Beach), and Carmel City Beach. Stillwater Cove at the Beach and Tennis Club was the only location that received a fair-to-poor water quality mark of "D."

With Monterey County only monitoring from April through October, there was insufficient wet weather data for analysis.

Clean Beach Initiative Summary

The City of Pacific Grove received a \$500,000 CBI grant to implement dry weather storm drain diversions at Lover's Point Park.

Sewage Spill Summary

There were five reported sewage spills in Monterey County that led to beach closures. Of the five spills, three were of unknown quantity, while the other two spills accounted for 1,400 gallons. Four of the five spills took place in two areas, Lover's Point and Ocean View (8th and 14th) in Pacific Grove.

SAN LUIS OBISPO

The County of San Luis Obispo, Environmental Health Department monitors 12 locations on a weekly basis from April through October, from as far upcoast as Cayucos State Beach in Cayucos to a downcoast location at Pismo State Beach in Oceano. Most samples are collected 25 yards north or south of the mouth of a storm drain or creek.

Dry weather water quality at all beaches in San Luis Obispo County was excellent. All 12 monitoring locations received letter grades of "A." Since San Luis Obispo County only monitors from April through October, there was insufficient wet weather data for analysis.

Clean Beach Initiative Summary

The City of Pismo Beach received a \$1.2 million CBI grant to replace an aged and inadequate sewage pump station at Addie Street to better handle flows during wet weather events, and reduce the number of potential sewer overflows into Pismo Creek.

Sewage Spill Summary

There were zero (0) reported sewage spills in San Luis Obispo County that led to beach closures.

SANTA BARBARA

The County of Santa Barbara, Environmental Health Agency monitors approximately 20 locations on a weekly basis throughout the year, from as far upcoast as Guadalupe Dunes south of the Santa Maria River outside the City of Guadalupe to a downcoast location at Rincon Beach, north of the creek. Most samples are collected 25 yards north or south of the mouth of a storm drain or creek.

Dry weather water quality at most beaches in Santa Barbara County was good. Of the 21 water quality monitoring locations, 15 locations received

2001-2002 Annual Beach Report Card — Santa Barbara County

Table 5

Number of Grades by Time Period for Santa Barbara Beaches

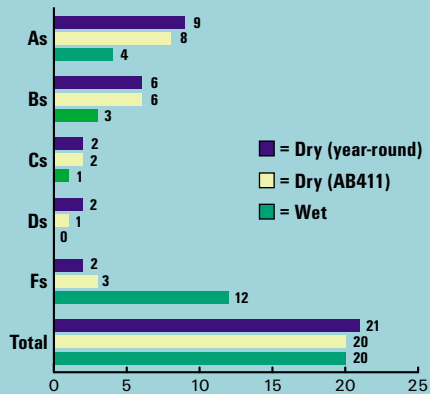
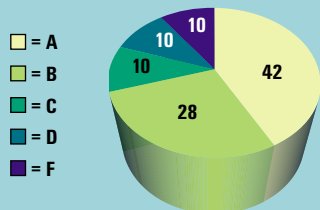
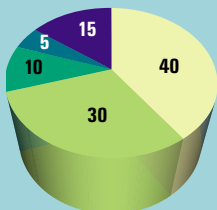


Table 6

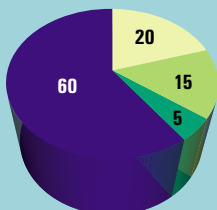
Percentage of Grades by Time Period for Santa Barbara Beaches



Dry (year-round)



Dry (AB411)



Wet (year-round)

good-to-excellent water quality marks (see Table 5 and Table 6). The cleanest beaches were again at Guadalupe Dunes, El Capitan State Beach, Sands, East Beach at Sycamore Creek, Butterfly Beach, and Carpinteria City Beach. Additions to this list were Ocean Beach, Hammonds Beach, and Rincon Beach. The good news for the year was that the historically polluted beach at Jalama received a good grade this year.

As surprising as Jalama Beach's absence from the problem beach list – which received a “B” grade – was the arrival of Leadbetter Beach, which received a grade of “D” this year but had received an “A” and “B” grade the prior two years. The three other problem beaches were all carry-overs from last year: Gaviota Beach, Arroyo Quemada, and East Beach at Mission Creek. Also, if you plan to swim at Rincon Beach, swim on the north side (Santa Barbara County) where the grade was an “A,” versus the south side (Ventura County) which received a “D” grade.

Taking a closer look at Arroyo Quemada Creek, last year the County published a report entitled “Bacteria

Source Study for the Lower Arroyo Quemada Creek Watershed” (URS Corporation 2001) which looked at identifying sources of bacterial contamination. Utilizing DNA analysis, the report cited birds as “...the most prevalent identified source of bacteria...” in the creek, lagoon and ocean. Other identified sources were humans, pets, and wildlife, however none at the same frequency or magnitude as those for birds. The report went on to state that the Tajiguas Landfill “may represent a major factor influencing the local bird population at Arroyo Quemada.” In addition, the report added that the data analyzed suggested “that leaking septic systems serving the private residences in the surrounding Arroyo Quemada community may represent a source of bacterial impacts in the lagoon.” It remains to be seen if the enhanced mitigation measures undertaken by the County at Tajiguas Landfill will reduce the bird populations and, in turn, improve water quality at Arroyo Quemada. As for the issue of potential septic system contributions to the lagoon, no further investigation is currently scheduled.

Table 7

Number of Grades by Year for Santa Barbara County Beaches During Dry Weather

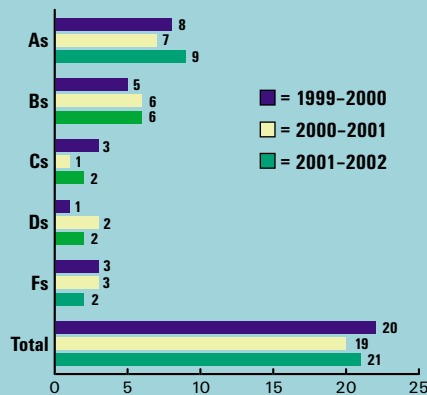
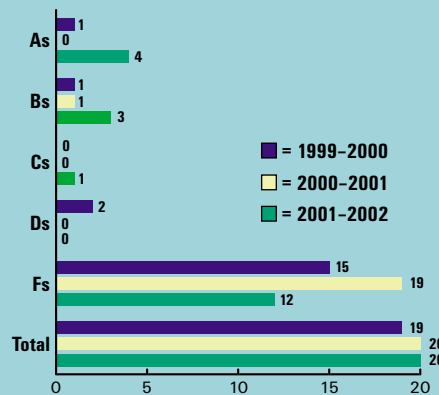


Table 8

Number of Grades by Year for Santa Barbara County Beaches During Wet Weather



Wet weather water quality in Santa Barbara County continues to be poor, on the whole. Although 60% of the beaches received an "F" this year, this was a considerable improvement from the previous two years – 100% in 2001 and 79% in 2000. The improved wet weather water quality can be attributed to the lack of a significant rainfall this past winter and spring.

Please see Table 7 and Table 8 for a brief review of dry- and wet-weather water quality trends for Santa Barbara County beaches for the past three years. As demonstrated in Table 8, the lack of rain this year significantly improved wet-weather water quality, compared to the previous two years, with seven locations receiving an "A" or "B" grade.

Clean Beach Initiative Summary

CBI water quality improvement projects are scheduled for Jalama Beach, Refugio Beach, Rincon Beach, Mission Creek, and Arroyo Burro. The City of Santa Barbara received a \$125,000 grant to initiate a source identification/source abatement effort, toward implementing dry-weather low flow diversions for Mission Creek and Arroyo Burro. The County of Santa Barbara received \$1.2 million to retrofit on-site bathroom facilities to prevent wastewater discharges and runoff pollution from impacting Jalama Beach, Refugio Beach, and Rincon Beach.

Sewage Spill Summary

There were zero (0) reported sewage spills in Santa Barbara County that led to beach closures.

VENTURA

The County of Ventura, Environmental Health Division, mon-

itors approximately 54 locations on a weekly basis throughout the year, from as far upcoast as Rincon Beach south of the creek (near the Santa Barbara County line) to a downcoast location at Staircase Beach, located at the north end of Leo Carrillo State Beach. Most samples collected in Ventura County are between 25 to 50 yards north or south of the mouth of a storm drain or creek.

For the third year in a row, overall dry weather water quality at Ventura County beaches was excellent. Of the 54 water quality monitoring locations, 50 (93%) locations received very-good-to-excellent water quality marks (see Table 9 and Table 10). By now, beachgoers should know where not to go swimming in Ventura County. A carbon copy of last year, the same four problem locations received the same exact grades: Channel Island Harbor at Hobie Beach ("F") and Channel Island Harbor at Kiddie Beach ("F"), Rincon Beach, 50 feet south of the creek mouth ("D"), and San Buenaventura Beach, at the Sanjon drain ("C").

Like other counties, Ventura County could not avoid poor water quality during wet weather conditions. This year's 53% for very-good-to-excellent grades ("A" or "B") during wet weather was significantly better than last year's 12%. However, the 53% during wet weather was still 40 percentage points lower than the 93% during dry weather, and further illustrates the disparity in water quality conditions between wet and dry weather.

Please see Table 11 and Table 12 for a brief review of dry- and wet-weather water quality trends for Ventura County beaches for the past three years. The lack of rain significantly

improved wet-weather water quality this year, as demonstrated in Table 12 by the lack of "F" grades.

Clean Beach Initiative Summary

2001-2002 Annual Beach Report Card — Ventura County

Table 9

Number of Grades by Time Period for Ventura Beaches

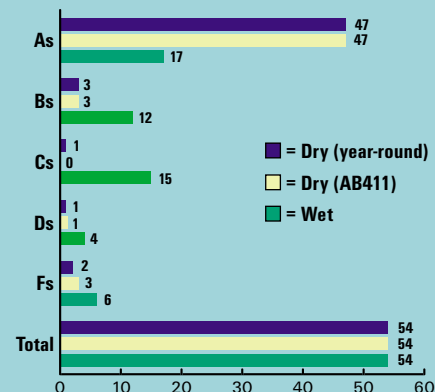
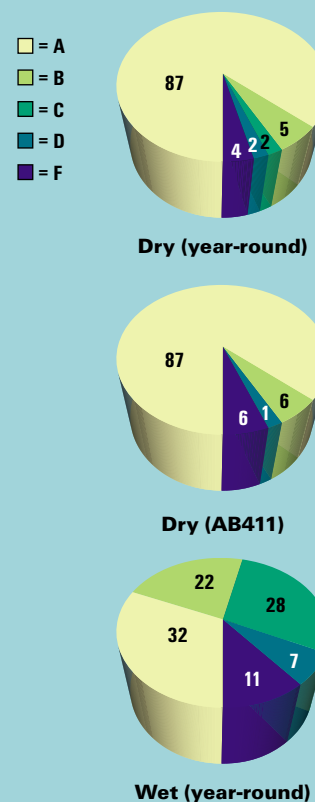


Table 10

Percentage of Grades by Time Period for Ventura Beaches





Hobie Beach, Channel Islands Harbor



San Buenaventura Beach, at the Sanjon drain

The County of Ventura has received a CBI grant for \$1.5 million to address the persistent water quality problems afflicting Kiddie Beach. The County has established a task force to assist in the implementation of the grant. The group will oversee the implementation of a source identification study and a tidal circulation study, and implement necessary abatement measures to reduce the amount of bacterial pollution at the beach.

Sewage Spill Summary

Ventura County had one sewage spill that led to a beach closure for the past year. A spill of 1,000 gallons occurred on October 17, 2001 in the

Arundell Barranca in the Ventura Harbor area, affecting a stretch of Peninsula Beach.

LOS ANGELES

There are four agencies within the County of Los Angeles that contribute monitoring information to Heal the Bay's Beach Report Card. The City of Los Angeles' Environmental Monitoring Division at the Hyperion Sewage Treatment Plant monitors 20 locations on a daily basis. The Los Angeles County Department of Health Services monitors 31 locations on a weekly basis. The Los Angeles County Sanitation Districts monitor eight locations, six of which are moni-

tored daily and two weekly. And finally, the City of Long Beach, Environmental Health Division, monitors approximately 20 locations on a weekly basis. All monitoring programs collect samples throughout the year and at a distance between 25 and 50 yards north or south of the mouth of a storm drain or creek.

Dry weather water quality at most Los Angeles County beaches was very good. Of the 81 locations monitored for water quality, 67 (87%) received very-good-to-excellent water quality marks (see Table 13 and Table 14). There were stretches of beaches that had great water quality for beachgoers, such as from Leo Carrillo beach to just upcoast of Surfrider Beach at the Malibu Colony fence (with the exception of Paradise Cove); Santa Monica Beach, projection of Montana Avenue to Venice Fishing Pier (except Santa Monica Beach Pier); Dockweiler Beach, south of Ballona Creek through the South Bay to Cabrillo Beach Oceanside (except Herondo Street storm drain); Long Beach City Beach at Prospect Avenue to Long Beach City Beach at 72nd Place (except Granada Avenue); and all swimming locations within Alamitos Bay.

Table 11

Number of Grades by Year for Ventura County Beaches During Dry Weather

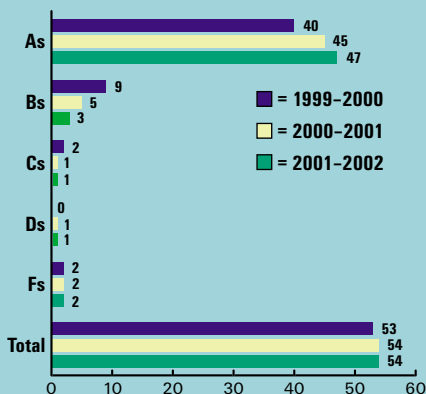
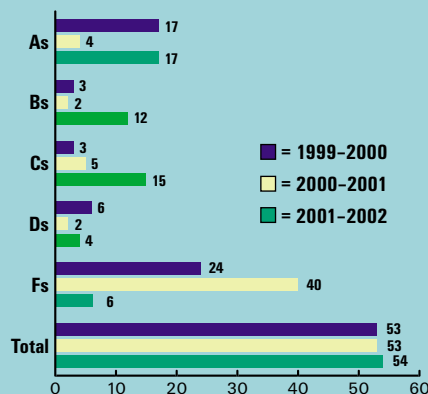


Table 12

Number of Grades by Year for Ventura County Beaches During Wet Weather



Those locations with dry weather diversions, such as Santa Monica Beach at both the Pico/Kenter and Ashland storm drains, Venice City Beach at Brooks Avenue, and Herondo Street storm drain, all received "A" grades during the summer swimming season (April through October).

There were only 10 locations (13%) that received a grade of "C" or lower. These beaches tend to be problem beaches year after year, such as: Surfrider Beach in Malibu, Will Rogers Beach at Santa Monica Canyon, Cabrillo Beach on the harbor side at the lifeguard tower, Long Beach City Beach at Granada, the Long Beach City Beach at Colorado Lagoon, and a number of locations at Avalon Beach on Catalina Island.

Wet weather water quality in Los Angeles County was much like every other county in California – very poor. During wet weather, 61% of the 54 monitored locations received a fair-to-poor water quality grade, of which 43% of beaches received an "F" grade. The lack of rainfall this year significantly reduced the disparity in water quality between wet and dry weather conditions. For example, the difference in the number of "F"s from dry weather (2) to wet weather (23) this year was 21, compared to last year's 41.

General Water Quality Trends for Santa Monica Bay

Heal the Bay analyzed trends for both dry and wet weather water quality for Los Angeles County beaches (excluding Long Beach and Catalina because of lack of data—these two monitoring programs were either inadequate or nonexistent prior to 1999) to deter-

mine how this year's water quality fared compared to the five-year average. Based on Table 15, the overall picture of dry weather water quality for Santa Monica Bay beaches can be summed up as an average year. While public agencies continue to make considerable improvements in dry weather water quality, wet weather water quality continues to suffer year after year, with water quality improvements stemming from the lack of rainfall. For example, there was a 34% decrease in the number of "C," "D," and "F" grades this year compared to the five-year average.

*The discrepancy in the number of dry weather grades and wet weather grades is due to a number of locations having been removed from the Los Angeles County, Department of Health Services monitoring program.

Clean Beach Initiative Summary

As part of the CBI program, there are 14 projects worth about \$11.5 million dollars to reduce bacterial pollution to local beaches in Los Angeles County. Those projects include three tidal circulation studies (Mothers' Beach, Cabrillo Beach, and Avalon Beach), four dry-weather diversion projects (Temescal Canyon, Santa Monica Canyon, Imperial Beach Boulevard storm drain, and Manhattan Beach at 27th), and two pier projects (Santa Monica Pier and Redondo Pier) focusing on source identification and abatement issues. In addition to the tidal circulation studies for both Mothers' Beach (County project) and Cabrillo Beach (City of Los Angeles project), there will be minor beach improvement projects at both beaches. Avalon Beach has installed

slip line sewer covers (enclosing existing sewer lines within new lines) to protect against subsurface (underground) wastewater flows to the

2001-2002 Annual Beach Report Card — Los Angeles County

Table 13

Number of Grades by Time Period for Los Angeles Beaches

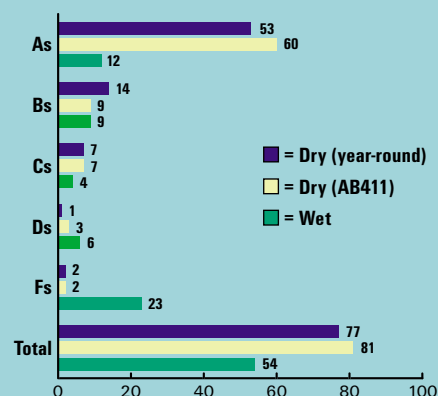
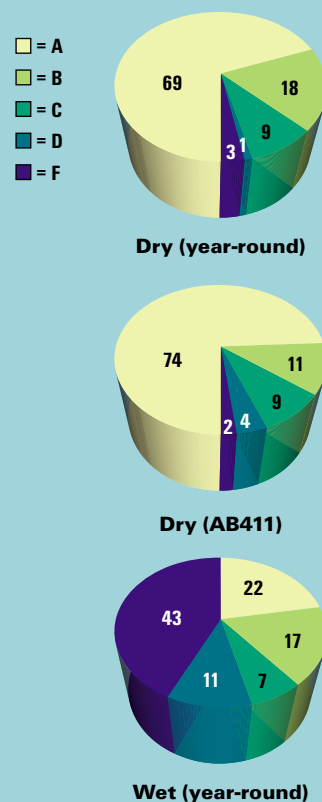


Table 14

Percentage of Grades by Time Period for Los Angeles Beaches





Manhattan Beach Pier



Mothers' Beach, Marina del Rey



Abalone Cove



Santa Monica Canyon at Will Rogers State Beach

nearby swimming beaches.

Sewage Spill Summary

There were 29 sewage spills through-

out the region this past year (April 2001 to March 2002) discharging a total volume of 1,564,993 gallons of sewage into local receiving waterbodies. Of the 29 sewage spills, three spills were in the major category (> 10,000 gallons) and accounted for 98% of the total volume spilled. Five of the 29 sewage spills actually led to beach closures. Although there was one less beach closure due to a sewage spill and approximately nine less sewage spills compared to last year, the volume of sewage spilled increased by 1,189,993 gallons.

ORANGE COUNTY

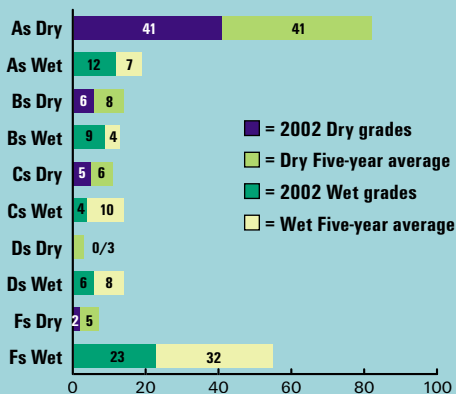
There are three agencies within Orange County that provide monitor-

ing information to Heal the Bay's Beach Report Card. The South Orange County Wastewater Authority (new name for both Aliso Water Management Agency (AWMA) and the South East Regional Reclamation Authority (SERRA)) monitors 33 locations on a weekly basis. The Orange County Environmental Health Division monitors 95 locations (of which 55+ locations are covered in the Beach Report Card) on a weekly basis. The Orange County Sanitation District monitors 17 locations twice a week. Samples are collected throughout the year, usually near flowing storm drains, creeks or rivers.

Overall, dry weather water quality at

Table 15

2002 Santa Monica Bay Water Quality Compared to the Five-year Average (1997-2001)



most beaches in Orange County was very good. Of the 105 water quality monitoring locations covered by the Beach Report Card, 81 (77%) received very good-to-excellent water quality marks (see Table 16 and Table 17). Orange County's stretches of beaches with great water quality were Seal Beach at 8th Street to Huntington State Beach at Newland Street; Newport Beach at Orange Street to Dana Point at Dana Strand Beach; and San Clemente, north of the pier, to San Clemente Beach at Las Palmeras. As for water quality on the bayside, the results were similar to last year. Most locations within Huntington Harbour and Newport Bay included in the Report Card were very-good-to-excellent, with the exception of 11th Street Beach in Huntington Harbour and Newport Dunes (North) and 43rd Street Beach (second year in a row) in Newport Bay.

There were 24 locations that received fair-to-poor water quality marks in Orange County. For the third year in a row, 14 of the 24 locations were in two areas, a stretch of Doheny Beach (from San Juan Creek to 5,000 feet of SOCWA's south outfall), and a pocket beach in Dana Point Harbor called Baby Beach. Other problem beach spots were: 1) for the third year in a row, Huntington State Beach at Magnolia Street and Newport Bay Beach at 43rd Street; and 2) for the second year in a row, Huntington Harbour Beach at 11th Street and Newport Bay Beach at Newport Dunes (north).

As for wet weather water quality in Orange County, there were 70 locations receiving fair-to-poor water quality marks, with 46% of the beaches

receiving an "F" during wet weather. Also, only 34% of the 105 locations monitored received very-good-to-excellent water quality marks compared to 77% during dry weather.

Please see Table 18 and Table 19 for a brief review of dry- and wet-weather water quality trends for Orange County beaches for the past three years. This was an average year for water quality at Orange County beaches during dry weather, while the lack of significant rainfall during this past year made for an above average year for water quality during wet weather.

Clean Beach Initiative Summary

Orange County has eight CBI projects costing approximately \$4 million dollars to reduce bacterial pollution to local beaches. The City of Dana Point will divert the Alipaz Street and Del Obispo Street storm drains away from San Juan Creek to the sanitary sewer. The City of Newport Beach will implement several dry-weather diversions, a tidal circulation study, and modify a number of storm drain inlets to Newport Bay beaches. The County of Orange will implement dry weather diversions at Poche Creek (or a package treatment facility), Huntington Beach, and Dana Point Harbor (Baby Beach). In addition to the diversion at Baby Beach, the County plans to conduct a tidal circulation feasibility study, to determine if increased tidal flows will reduce bacterial concentrations, and a source identification study.

Sewage Spill Summary

Once again, Orange County led all other counties covered in this report in the total number of sewage spills

last year (April 2001 through March 2002) that led to beach closures. A total of 51 sewage spills closed beaches throughout Orange County and

2001-2002 Annual Beach Report Card — Orange County

Table 16

Number of Grades by Time Period for Orange County Beaches

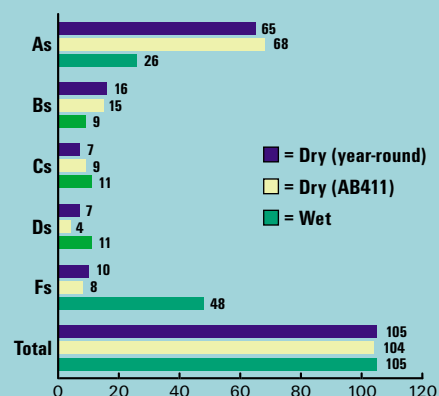
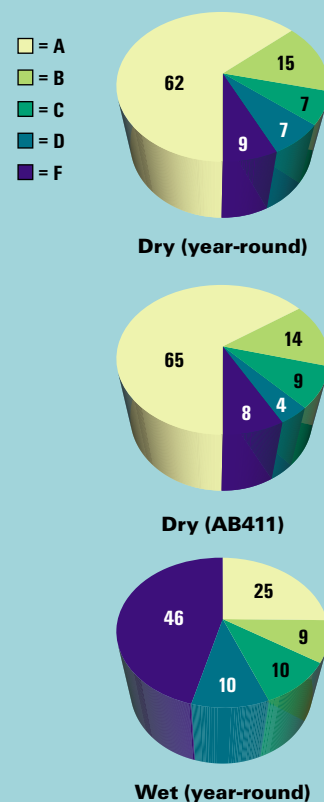


Table 17

Percentage of Grades by Time Period for Orange County Beaches





Crystal Cove



Seal Beach

discharged over 76,700 gallons of sewage. None of these spills were "major" sewage spills (> 10,000 gallons), which was an improvement compared to last year's six major spills discharging 478,032 gallons. Although the number of beach closures due to sewage increased by 14 spills, the total volume of sewage spilled to receiving waters decreased by 435,769 gallons.

SAN DIEGO

There are six agencies within San Diego County that provide monitoring information to Heal the Bay's Beach Report Card: the City of Oceanside, the City of San Diego, Encina Wastewater Authority, San Elijo Joint Powers

Authority, the San Onofre Generating Station, and the County of San Diego Environmental Health Services. A majority of the 110 monitoring locations covered by the Beach Report Card are sampled and analyzed by the City and County of San Diego. Samples are generally collected at the wave wash (where runoff and ocean water mix) or at a 25-yard distance from a flowing storm drain, creek or river.

Overall, dry weather water quality at beaches in San Diego County was very good. Of the 110 water quality monitoring locations, 84% received very good-to-excellent water quality marks (see Table 20 and Table 21). Similar to Los Angeles and Orange County,

San Diego County had stretches of beaches with great water quality, such as Oceanside at Harbor Beach to Leucadia at Grandview Street; Swami's Beach in Encinitas to Windansea Beach; Ocean Beach at Ocean Pier to Point Loma Lighthouse; and Coronado at North Beach to Imperial Beach at Seacoast Drive. Within Mission and San Diego Bays, for the second year in a row, water quality varied greatly from beach to beach. As was noted in last year's Annual Report, and is true for this report, beaches located within enclosed bays tend to have reduced tidal circulation and are more susceptible to long-term pollution problems compared to open-ocean beaches. Only 27 of 40 (68%) beaches within the bays received very-good-to-excellent water quality marks, compared to the 65 of 69 (94%) beaches on the ocean side in San Diego County.

There were 18 locations in San Diego County that received fair-to-poor water quality marks. The beaches in Mission and San Diego Bay accounted for 12 of the 18 poor grades. Other problem beaches for the second year in a row were: Moonlight Beach in Encinitas, Pacific

Table 18

Number of Grades by Year for Orange County Beaches During Dry Weather

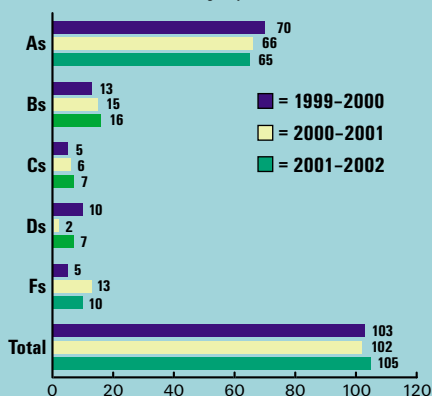
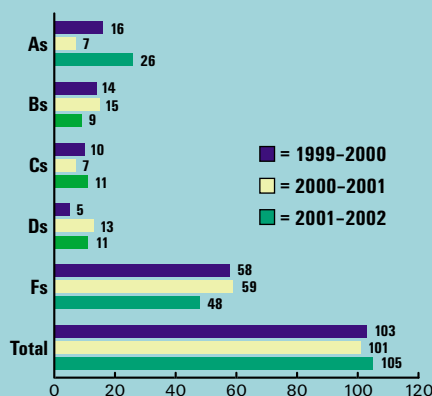


Table 19

Number of Grades by Year for Orange County Beaches During Wet Weather



Beach at P.B. Point, and the Tijuana Slough Natural Wildlife Reserve at the Border Field State Park.

San Diego County fared much better during wet weather than most other Southern California counties, with the County having the highest percentage of beaches that received an “A” grade, and the second lowest percentage of beaches receiving an “F” grade. The only caveat is that the County severely reduces its monitoring program by 80%, with only 22 locations monitored during wet weather.

Clean Beach Initiative Summary

As part of the CBI program, there are five projects costing approximately \$7.8 million to reduce bacterial pollution to local beaches in San Diego County. Three of the proposed projects are dry-weather diversions (Imperial Beach, Coronado Beach, and Mission Bay). In addition to the diversion projects planned for Mission Bay, the City of San Diego will conduct a number of source identification studies on various watersheds that discharge to Mission Bay. The City of Encinitas will install an ultraviolet/ozone treatment facility at Moonlight Beach (Cottonwood Creek) to reduce the bacterial pollution in the creek before discharging it back into the lagoon and out to the ocean. The City of Imperial Beach will try to determine the extent of beach area affected during different time periods by flows from the Tijuana River Treatment Plant, the South Bay Treatment Plant and urban runoff from the Tijuana River. Finally, the City of Imperial Beach will be focusing on the relationship between ocean currents (flow direction) from the Tijuana River, and

magnitude and frequency of bacterial exceedances.

Sewage Spill Summary

Whereas Orange County led all counties in the total number of sewage spills that triggered a beach closure, the County of San Diego led all counties in total sewage volume spilled. There were 32 beach closures due to sewage spills, discharging 13,034,515 gallons to the ocean. The bulk of the volume spilled can be attributed to one extremely large sewage spill from the Tijuana Slough of 12 million gallons, which accounted for 92% of the total volume spilled. There were six additional beach closures attributed to the Tijuana Slough sewage spills. However, there were no known volumes associated with those spills. In addition, two other waterbodies, San Diego Bay and Ocean (Dog) Beach at the San Diego River outlet, were often impacted by sewage spills. There were six spills at both locations, discharging 229,700 gallons and 737,850 gallons of sewage, respectively. Overall, there were nine major spills (> 10,000 gallons), 16 minor spills, and six spills of unknown volume in San Diego County.

Beach Pollution Patterns

Once again, Heal the Bay analyzed the Southern California data (Santa Barbara County to San Diego County) to determine if there were regional monitoring trends. Were there significant differences in water quality based on beach type? For this analysis, Heal the Bay divided all Southern California beaches into three categories: open ocean beaches, beaches adjacent to a creek, river, or storm drain (natural or concrete), and beaches located within enclosed

waterbodies. Heal the Bay began by evaluating the Beach Report Card grades compiled for this year's Annual Report. The grades were ana-

2001-2002 Annual Beach Report Card — San Diego County

Table 20

Number of Grades by Time Period for San Diego County Beaches

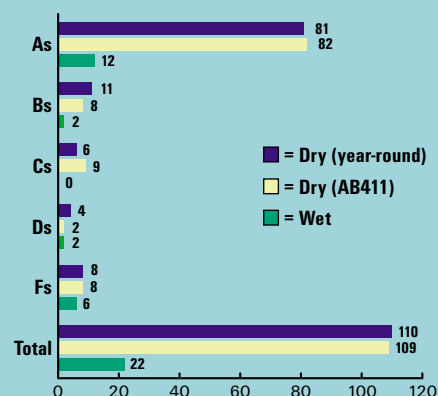
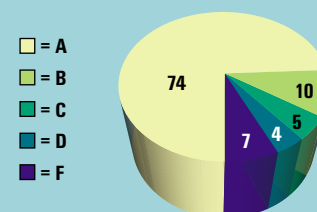
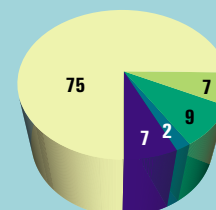


Table 21

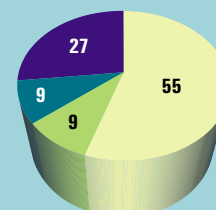
Percentage of Grades by Time Period for San Diego County Beaches



Dry (year-round)



Dry (AB411)



Wet (year-round)



Baby Beach, Dana Point Harbor

lyzed for three different time periods: dry weather “summer months” from April to October, dry weather year-round, and wet weather year-round. Table 22 illustrates the grades by percent during dry weather for both year-round and AB411 (April to

October) conditions.

For the second year in a row, the results demonstrate that water quality at open ocean beaches is substantially better than at beaches impacted by storm drains. These results are not surprising because

storm drains are known sources of high indicator bacteria densities. In general, the worst water quality is found at enclosed beaches, probably because of the poor water circulation that is often associated with these beaches. Approximately 35% of the enclosed beaches received poor water quality grades as opposed to 14% and 0% of those beaches impacted by storm drains and located at open ocean locations respectively. Enclosed beaches continue to demonstrate poor water quality conditions compared to their counterparts on the ocean-facing side. Although enclosed beaches appear safe and inviting to

children, parents should become informed about the water quality before allowing their children to swim these beaches.

The results also demonstrate that there was not a substantial difference (varying between one and five percent) between year-round dry weather quality and beach water quality during the “summer-AB 411” months

The lack of rainfall this year significantly improved overall wet weather water quality throughout the three beach types (see Table 23). For example, last year the percentage of “F” letter grades for open ocean, storm drain impacted, and enclosed beaches were 40%, 66%, and 93% respectively, compared to this year’s 11%, 37%, and 68%. However, the disparity in water quality from beach type to beach type remained, with open ocean beaches once again having the best water quality during wet weather. Both storm-drain-impacted beaches and enclosed beaches had poor water quality during wet weather, with enclosed beaches failing 68% of the time.

Table 22

Grades by Percent Relative to Type of Beach During Dry Weather Conditions from April 2001 through March 2002

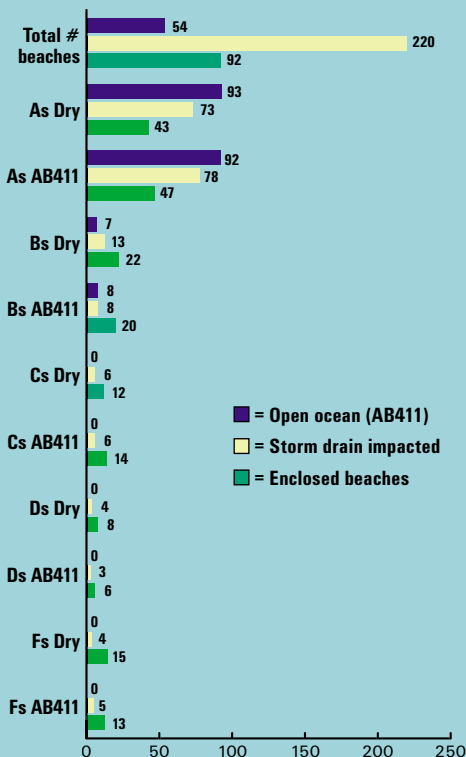
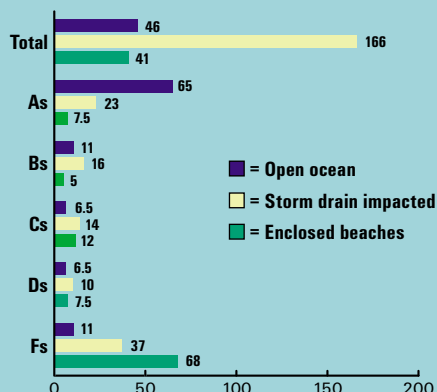


Table 23

Grades by Percent Relative to Type of Beach During Wet Weather from April 2001 through March 2002



State and Federal Legislation Update



Kiddie Beach, Channel Islands Harbor

FEDERAL

USEPA's BEACH Program

The U.S. Environmental Protection Agency (USEPA) recently provided \$10 million in grant funds to states to help establish National Bathing Water Standards. The program was supposed to develop beach water quality monitoring and public notification programs, because practices vary considerably, from county to county and state to state, at beaches and other recreational waters across the country. These national standards are designed to ensure that beach water quality monitoring standards and public notification programs adequately protect public health regardless of the location of the beach.

However, two documents related to the BEACH program – the National Beach Guidance and Grant

Performance Criteria for Recreational Waters, and the Ambient Water Quality Criteria for Bacteria – contain a number of shortcomings that do not address the original legislative intent—to standardize monitoring and reporting programs

to better protect beachgoer health.

The reasons are discussed later in our recommendations section.

STATE

Clean Beaches Initiative

Last year, Governor Davis appropriated \$34 million in the state budget for protecting and restoring the health of California's beaches. Approximately \$32 million was directly allocated for capital projects to improve water quality at popular polluted beaches over the next two years. An additional \$1.5 million is earmarked for much-needed research on rapid pathogen indicators and pathogen source identification efforts.

The \$32 million has largely been distributed to 39 projects throughout the coastal portion of the state, with the State Water Resources Control

Board (SWRCB) managing and implementing the program. The Clean Beaches Advisory Group, a technical committee formed by the SWRCB, has reviewed most of the proposed projects to ensure that the goal of the Clean Beach Initiative – a reduction in the number of beaches posted or closed and a lower frequency of beach closures or postings due to bacterial pollution – is achieved.

Proposition 40

With the passage of Proposition 40 (AB1602, Keeley, the California Clean Water, Clean Air, Safe Neighborhood Parks and Coastal Protection Bond Act of 2002), \$2.6 billion is now available to provide clean, safe drinking water, clean beaches and coastal waters, improve state and neighborhood parks, protect wildlife and open space, and achieve better air quality. More specifically, there is now \$375 million set aside for watershed protection, clean beaches, rivers and streams.

Proposition 40 continues the important work initiated by Propositions 12 and 13, to further clean up California's most polluted beaches, rivers, and creeks. The fact that funding will be made available on a per-capita basis means that every coastal community will benefit from the passage of this ballot measure.

Updates, Accomplishments and Future Recommendations



Cabrillo Beach, harborside at lifeguard tower

Fecal Total Maximum Daily Loads

This past January, the Los Angeles Regional Water Quality Control Board (RWQCB) adopted a dry-weather Fecal Bacteria (Pathogen) Total Maximum Daily Load (TMDL) for Santa Monica Bay beaches. A TMDL is the maximum amount of a pollutant, in this case fecal bacteria, that a water body can receive and still meet water quality standards set to protect the beneficial uses of that water body. The Santa Monica Bay fecal bacteria TMDL for dry weather will prohibit any bacterial exceedance at all beaches during the summer months (April through October). All beaches must be cleaned up and in compliance with this TMDL by 2006. For dry weather conditions outside of the summer month time period (November through March), no beach in Santa Monica Bay will be allowed to exceed bacterial standards for more than 3% of the dry weather days sampled. This TMDL has finally

moved us from the rhetoric of “swimmable waters” to the reality of clean beaches. Soon, beachgoers may no longer have to concern themselves about water quality conditions when entering the water in Santa Monica Bay during dry weather. This

process was a result of a 1998 consent decree entered into between Heal the Bay, NRDC, the Santa Monica Baykeeper and the EPA.

Recommendations for the coming year:

- Continue to advocate for the United States Environmental Protection Agency (USEPA) to incorporate California’s Beach Bathing Water Standards and Public Notification Protocols into the nationwide program. The USEPA will soon make public the National Beach Guidance and Grant Performance Criteria for Recreational Waters (nationwide beach water quality monitoring and public notification program). Yet there are considerable shortcomings of the program as proposed. As currently written, USEPA will allow for sampling frequencies as infrequently as monthly for some beaches, monitoring beach water

quality without a requirement for timely public notification, variable sampling techniques and no required method of public notification when beach water quality has been exceeded. USEPA’s original goal, to develop a national standardized monitoring and reporting program for beaches, will not be achieved with the current program. The program does not adequately guide health officers to establish a meaningful monitoring program or provide beachgoers adequate health protection. Finally, USEPA should have developed a rigorous, health-protecting model beach program, in which states that are willing to implement all or most of the model program would be eligible for funding. USEPA refused to do this because many eastern states want funding to perpetuate their inadequate monitoring programs.

- Advocate for the USEPA to make six major modifications to the Ambient Water Quality Criteria for Bacteria, 2002 version. USEPA is in the midst of reissuing the 1986 Ambient Water Quality Criteria for Bacteria. This document has a significant number of shortcomings, which further reduce the health protection of recreational water users. Three of the six major issues are 1) USEPA’s lack of justification for allowable risk rates (the number of acceptable illnesses among recreational water users); 2) the

proposal to increase the allowable risk rates (illnesses) for freshwater users from 8 illness per 1000 swimmers to 14; and 3) USEPA's support of a variable standard for bacterial indicators depending on beach usage. On the third point, USEPA finds it acceptable for a beachgoer to swim in more contaminated water at Leo Carrillo Beach in Malibu than at Venice City Beach, merely because Leo Carrillo Beach is frequented by fewer people. The proposal would allow enterococcus densities to be three times higher at less frequented beaches.

- Advocate for the Regional Water Quality Control Board (RWQCB) to adopt a strong wet weather Total Maximum Daily Load (TMDL) for Santa Monica Bay beaches, and a fecal bacteria TMDL for Malibu Creek. The RWQCB staff is in the process of completing the wet weather TMDL for Santa Monica Bay beaches and should be presenting the document to the board for adoption this summer. The key issue of this TMDL will be the number of days municipalities/public agencies are allowed to exceed State Beach Bathing and Ocean Plan standards. This will depend on the reference site selected (e.g., a beach with no, or very few, sources of pollution) and the rainfall percentile selected to run the TMDL model. The wet-weather TMDL should not allow bathing water health standards to be exceeded any more frequently than beaches at the mouths of reference watersheds. Look for the issue to be extremely controversial.

As for the fecal bacteria TMDL for Malibu Creek, the RWQCB must use bathing water quality standards to set the TMDL and assign tough waste load allocations to the various known bacterial inputs from urban runoff, horses, and septic systems. Also, the implementation plan for the various sources of fecal bacteria needs to be detailed. The Malibu Creek fecal bacteria TMDL will probably be before the Board this fall.

- Advocate for the Los Angeles County, Department of Health Services to resume weekly water quality monitoring at Mothers' Beach in Marina del Rey. Since September 2000, the County has ceased all shoreline monitoring within Mothers' Beach, relying solely on the City of Los Angeles' single sample location. As has been demonstrated in past years in our Beach Report Card, water quality conditions at Mothers' Beach and other enclosed beaches can vary significantly within a short distance. Mothers' Beach is the only enclosed beach in all of southern California with only one sampling station. Other enclosed beaches, such as Kiddie Beach in Ventura County, Baby Beach in Orange County, and Avalon Beach on Catalina Island, which are much smaller in beach area, have multiple monitoring stations to better characterize overall water quality. By reducing the total number of samples collected and beach area covered, County Health Services has, in effect, deprived the public of their right to know about accurate water quality conditions, and

of their ability to make an informed decision about attending that beach.

- Continue to ensure that best management practices are implemented at enclosed beaches, and develop and implement tidal circulation improvements to reduce bacterial indicator densities. Beaches such as Kiddie Beach in Channel Island Harbor, Mothers' Beach in Marina del Rey, Cabrillo Beach in Los Angeles Harbor, Mothers' Beach in Long Beach and Baby Beach in Dana Point Harbor all received fair to poor water quality marks. Whether the pollution problem is due to the lack of tidal circulation or the beach's proximity to a pollution source, young beachgoers are far too frequently exposed to unhealthful water quality conditions. One of Heal the Bay's highest priorities for the year is to ensure that these chronically polluted beaches are cleaned up.
- Continue to encourage monitoring agencies to monitor water quality at popular beaches year-round (beyond the AB411 required dates of April-October). Year-round monitoring provides those beachgoers, namely surfers who frequent the beach due to winter swells, with important information about water quality. In California there is no set beach season. Surfers, swimmers, divers, wind-surfers, and kayakers use the water year-round, so all of these ocean enthusiasts have the right to know about water quality at their favorite beaches on a year-round basis.

■ Continue to work with the Counties of Marin, San Francisco, and San Mateo to develop or improve their monitoring programs. Heal the Bay will continue to work with the Environmental Health Departments in each of these counties to ensure that the necessary resources exist for them to develop an adequate monitoring and public notification program. Beaches in these counties are far too popular to have inadequate or non-existent beach monitoring and/or reporting programs. Again, the public has the right to know about water quality at their favorite beaches.

■ Advocate for the State to enforce Sanitary Survey Protocol Requirement as established in AB538 and Ocean Plan. In an effort to do more than just notify beachgoers of potential water quality problems at their favorite beaches, per AB411, AB538 was passed to require sanitary surveys (source investigations) to be completed at those beaches where water quality problems existed. The idea was to determine where beaches with water quality problems existed, identify the sources causing the impairment, and implement necessary strategies to abate the pollution source. The requirement of a source investigation is not a new concept created by AB538 in 1999. The Ocean Plan has stipulated this procedure since 1988. The issue is that the State rarely enforces or requires municipalities to implement these surveys when exceedances occur. The Ocean Plan states that "...if a shore station con-

sistently exceeds a coliform objective or exceeds a geometric mean...the Regional Board shall require the appropriate agency to conduct a survey to determine if that agency's discharge is the source of the contamination." (State Water Resources Control Board Ocean Plan 1997) AB538 states that source investigations shall be conducted "if bacteriological standards are exceeded in any three weeks of a four-week period, or, for areas where testing is done more than once a week, 75 percent of testing days that produce an exceedance of those standards."

■ Advocate for full funding of the Beach Water Quality Source Identification and Technical Assistance Projects. Last year, Governor Davis, as part of the Clean Beach Initiative, appropriated \$1.5 million for research on rapid pathogen indicators and pathogen source identification efforts. Unfortunately, this allotment was only a fraction of the amount of funding needed to adequately study beach pollution issues. Given the importance of coastal tourism to the California economy – the Natural Resources Defense Council estimated that \$37 billion was generated by coastal tourism in their 1999 "Testing the Waters: A Guide to Water Quality at Vacation Beaches" – Heal the Bay strongly recommends that \$20 million be allocated to conduct a number of necessary scientific studies. Such studies include pathogen detection and quantification methods, a source identification methodology, a characterization of

runoff sources and reduction in nuisance flows, and health-effect studies for wet-weather exposures, multiple exposures, and at enclosed beaches. Understanding beach pollution problems, their cause, the fate and transport of pathogens and pathogen indicators, and the human and marine impacts of exposure to polluted runoff and pathogens, will help us to better protect this coastal resource. This is a recommendation that has been echoed by the State Water Resources Control Board's Beach Water Quality Workgroup.

■ Advocate for additional Clean Beach Initiative funding. Heal the Bay is advocating for an additional \$25 million a year for the next three years to be spent on coastal projects to further reduce bacterial pollution at local beaches. The CBI has proven to be an effective program and more resources are needed to help clean up California's most polluted beaches. The recently-passed Proposition 40 is an excellent source of funds for the program.

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County of Monterey, Environmental Health Division; the County of San Luis Obispo, Environmental Health Services; the County of Santa Barbara, Environmental Health Services; the County of Ventura, Environmental Health Division; City of Los Angeles Environmental Monitoring Division; the Los Angeles County Sanitation Districts; the Los Angeles County, Department of Health Services; the City of Long Beach, Department of Health and Human Services, Division of Environmental Health; the County of

Orange, Department of Public Health, Environmental Health Division; the Orange County Sanitation District; the South Orange County Wastewater Authority; the County of San Diego, Department of Environmental Health, Land and Water Quality Division; and the State Water Resources Control Board.

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Appendix A

Each threshold is based on the prescribed standards set in the California Department of Health Service's Beach Bathing Water Standards. The magnitude of the water quality threshold exceedance and laboratory variability was addressed by the inclusion of standard deviations in setting the thresholds. The standard deviations used were developed during the 1998 laboratory inter-calibration study led by the Southern California Coastal Water Research Project and the Orange County Sanitation District that involved over 20 shoreline water quality monitoring agencies in Southern California.

The number of points subtracted from 100 for total coliform, fecal coliform, and enterococcus are: **6 points** for bacterial densities falling in group one (threshold minus one standard deviation or $T - 1$ s.d.), **18 points** for group two ($T + 1$ s.d.), and **24 points** for group three (indicator densities $> T + 1$ s.d.). The point system for total to fecal ratio is: **7 points** for group one, **21 points** for group two, **35 points** for group three, and **42 points** for group four (very high health risk). Exceedance of the total to fecal ratio threshold leads to lower grades because exposure to water with low ratios causes an even higher incidence of a variety of adverse health effects relative to the health risk associated with the other bacterial indicators.

TABLE A-1. Bacterial Indicator Exceedance Thresholds in cfu/100ml.

Group:	1 $T - 1$ s.d. ¹	2 $T + 1$ s.d.	3 $> T + 1$ s.d.	4 very high risk
Total Coliform	6,711-9,999	10,000 ² -14,900	$> 14,900$	na
Fecal Coliform	268-399	400 -596	> 596	na
Enterococcus	70-103	104 -155	> 155	na
Total to Fecal Ratio (when: Total $> 1,000$)	10.1-13	7.1-10	2.1-7	< 2.1

1) s.d.—standard deviation

2) Bold numbers are the State Health Department standards for a single sample.

TABLE A-2. Threshold Points

Group:	1 $T - 1$ s.d. ¹	2 $T + 1$ s.d.	3 $> T + 1$ s.d.	4 very high risk
Total Coliform Fecal Coliform Enterococcus:	6	18	24	
Total to Fecal Ratio: (when: Total $> 1,000$)	7	21	35	42

1) s.d.—standard deviation

The total number of points for the annual period is divided by the average number of samples collected in a week. This number is then subtracted from the original 100 points to obtain a grand total from which a letter grade is derived.

The grading system is as follows:

TABLE A-3. Grading System

Grade	Points
A+	= 100
A	= 90-99
B	= 80-89
C	= 70-79
D	= 60-69
F	= 0-59

Appendix B

2001-2002 Beach Report Card Annual Grades by County

Sonoma County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Gualala Regional Park Beach	A+	*	*
Black Point Beach	A+	*	*
Stillwater Cove Regional Park Beach	A+	*	*
Goat Rock State Park Beach	A+	*	*
Salmon Creek State Park Beach	A+	*	*
Campbell Cove State Park Beach	F	*	*
Doran Regional Park Beach	A+	*	*

Santa Cruz County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Waddell Creek Beach at Waddell Creek	A+	A+	*
Scott Creek Beach at Scott Creek	A+	A+	*
Davenport Beach at San Vicente Creek	B	A	*
Natural Bridges State Beach	A	A	F
Mitchell's Cove Beach	B	B	*
Lighthouse Beach (Steamer Lane)	A+	A+	*
Cowell Beach at Stairs	A+	A+	F
Cowell Beach, west of wharf	A	A	F
Santa Cruz Main Beach, at Boardwalk	A	A	F
Santa Cruz Main Beach, at San Lorenzo River	A	A	F
Seabright Beach	A+	A+	F
Twin Lakes Beach	A+	A	F
Sunny Cove Beach	C	B	*
Corcoran Lagoon Beach	*	A+	*
Moran Lake Beach	*	A+	*
Pleasure Point Beach	A+	A	*
Capitola, Hooper's Beach	D	D	*
Capitola Beach, east of Capitola Pier	D	F	*
Capitola Beach, west of jetty	C	F	F
Capitola Beach, east of jetty	A	B	F
New Brighton Beach	A+	A	F
Seacliff State Beach	A	A	F
Rio Del Mar Beach	A	C	F
Hidden Beach	A+	A+	*
Manresa Beach	A+	A+	*
Sunset Beach	A+	A+	*
Palm/Pajaro Dunes Beach	A+	A	A

**Health Department only monitors during AB411 (April through October) and/or not enough wet weather samples to determine a wet weather grade.*

Monterey County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Monterey Beach Hotel, west of Robert's Lake outlet	A+	*	*
Del Monte Beach, projection of Camino El Estero	B	*	*
San Carlos Beach at San Carlos Beach Park	B	*	*
Lover's Point Park, projection of 16th Street	B	*	*
Asilomar State Beach, projection of Arena Av.	A	*	*
Spanish Bay at Moss Beach	A	*	*
Stillwater Cove at Beach and Tennis Club	D	*	*
Carmel City Beach, projection of Ocean Av.	A+	*	*

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San Luis Obispo County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Cayucos State Beach, between Cayucos Creek and Pier	A+	*	*
Cayucos State Beach, south of pier	A+	*	*
Morro Bay City Beach, projection of Atascadero Rd.	A+	*	*
Morro Bay City Beach, 75 feet north of main parking lot	A+	*	*
Avila Beach, projection of San Juan St.	A+	*	*
Avila Beach, projection of San Luis St.	A+	*	*
Pismo Beach, projection of Wadsworth St.	A	*	*
Pismo Beach Pier, 50 feet south of pier	A	*	*
Pismo Beach, projection of Ocean View Av.	A	*	*
Pismo State Beach, 330 yards north of Pier Av.	A+	*	*
Pismo State Beach, projection of Pier Av.	A+	*	*
Pismo State Beach, projection of Sandpiper Ln.	A	*	*

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Santa Barbara County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Guadalupe Dunes	A	A	A
Ocean Beach at Santa Ynez River	*	A+	A+
Ocean Beach , 1/2 mile south	B	B	*
Jalama Beach at Jalama Creek	B	B	F
Gaviota State Beach at Canada de las Cruces	D	D	F
Arroyo Quemada	F	F	F
Refugio State Beach at Canada del Refugio	B	C	F
El Capitan State Beach at Canada del Capitan	A	A	A
Haskell's Beach	B	B	B
Sands at Coal Oil Point	A	A	B
Goleta Beach, 200 yards east of pier	C	B	F
Hope Ranch Beach at Las Palmas Creek	B	B	F
Arroyo Burro Beach at Arroyo Burro Creek	C	B	F
Leadbetter Beach at Honda Creek	F	D	F
East Beach at Mission Creek	F	F	F
East Beach at Sycamore Creek	A	A	F
Butterfly Beach	A	A	C
Hammond's Beach at Montecito Creek	B	A	F
Carpinteria City Beach, projection of Linden Av.	A+	A	B
Carpinteria State Beach at Carpinteria Creek	A	C	F
Rincon Beach at Rincon Creek	A	A	A

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Ventura County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Rincon Beach, 50 feet south of creek mouth	F	D	F
Rincon Beach, 100 yards south of creek mouth	A	A	B
Rincon Beach at end of footpath to beach	B	B	B
La Conchita Beach at Ocean View Rd.drain	A	A	C
Mussel Shoals Beach, 100 yards south of pier	A+	A+	A
Oil Piers Beach, south of Mobile Pier Rd.	A+	A	A
Hobson County Park, across from the stairs	B	A	A+
Rincon Parkway North at Javon Canyon	A+	A+	A
Faria County Park at Padre Juan Creek	A+	A+	D
Mandos Cove	A	A	C
Solimar Beach, north end	A+	A+	A+
Solimar Beach, south end	A	A	B
Emma Wood State Beach, 50 yards south of first drain	A	A	B
Seaside Wilderness Park, 400 yards north of Ventura River	A+	A+	A
Surfer's Point at Seaside Park	A	A	F
Promenade Park, projection of Figueroa St.	A	A	F
Promenade Park, projection of Paseo del Playa	A	A	B
Promenade Park, projection of Oak Street	A	A	C
Promenade Park, projection of California St.	B	B	C
San Buenaventura Beach at Kalorama St. drain	A	A	C
San Buenaventura Beach at Sanjon Rd. drain	D	C	D
San Buenaventura Beach at Dover Ln. drain	A	A	B
San Buenaventura Beach at Weymouth Ln. drain	A+	A+	C
Marina Park, north of the playground	A	A	C
Peninsula Beach, north of south jetty	A	A	F
South Jetty Beach	A+	A+	A
Surfer's Knoll	A	A	C
McGrath State Beach, half mile north of Gonzales Rd	A	A	C
McGrath State Beach, projection of Gonzales Rd	A	A	C
McGrath State Beach, southend of McGrath Lake	A+	A+	C
Mandalay County Park, projection of 5th St.	A+	A+	B
Mandalay County Park, projection of Channel Way	A+	A+	B
Mandalay County Park, projection of Outrigger Way	A+	A+	C
Oxnard Shores, projection of Amalfi Way	A+	A+	C

Ventura County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Oxnard State Beach, projection of Falkirk Av.	A+	A+	C
Oxnard State Beach, projection of Starfish Dr.	A+	A+	C
Hollywood Beach, porjection of La Crescenta St.	A+	A+	B
Hollywood Beach, projection of Los Robles St.	A+	A+	A
Channel Islands Harbor, Hobie Beach at Lakshore Dr.	F	F	F
Channel Islands Harbor at Kiddie Beach	F	F	F
Channel Islands Harbor at Kiddie Beach (end of rocks)	A	B	B
Silverstrand, projection of San Nicholas Av.	A	A	A+
Silverstrand, projection of Santa Paula Dr.	A+	A+	A+
Silverstrand, La Jennelle Park at Sawtelle Av.	A+	A	B
Port Hueneme Beach Park, 50 yards north of fishing pier	A+	A+	A+
Ormond Beach, 50 yards south of J Street drain	A+	A	A
Ormond Beach, 50 yards north of Oxnard Industrial drain	A	A	B
Ormond Beach, projection of Arnold Rd.	A+	A+	D
Point Mugu Beach	A+	A+	D
Thornhill Broome Beach at La Jolla Canyon	A+	A	A+
Sycamore Cove Beach, 50 yards south of Sycamore Canyon Creek	A+	A+	A+
Deer Creek, 50 yards south of creek	A	A	A+
County Line Beach, 50 yards south of creek	A	A	A+
Staircase Beach	A+	A+	A

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Los Angeles County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Leo Carrillo Beach	A	A	A
Nicholas Canyon Beach, 33 yards west of lifeguard tower	A	A	A+
Trancas Beach entrance	A	A	A
Westward Beach	A	A	B
Paradise Cove	C	C	F
Latigo Canyon Creek entrance	A+	A	D
Puerco Beach, lifeguard station by bridge	A+	A	B
Surfrider Beach at Malibu Colony fence	A	A	F
Surfrider Beach at breach location	F	F	F
Malibu Pier, 50 yards east	B	B	F
Big Rock Beach	A	B	F
Topanga State Beach	A	A	F
Will Rogers Beach, 400 yards east at PCH and Sunset Bl	A	A	D
Will Rogers Beach, east of Bel Air Bay Club	B	A	C
Will Rogers Beach at Pulga Canyon storm drain	A	A	A
Will Rogers Beach at Temescal Canyon	C	B	F
Will Rogers Beach at Santa Monica Canyon	C	C	F
Santa Monica Beach, projection of Montana Av.	A+	A	F
Santa Monica Beach, projection of Arizona Av.	A	A	F
Santa Monica Municipal Pier, 50 yards south	C	C	F
Santa Monica Beach at Pico/Kenter storm drain	A	A	F
Santa Monica Beach, projection of Strand St.	A+	A	F
Ocean Park Beach, 50 yards south of Ashland Av storm drain	A	A	C
Venice Beach, projection of Brooks Av.	A+	A	F
Venice Beach, projection of Windward Av.	A	A	B
Venice Fishing Pier, 50 yards south	A	A	B
Venice Beach, projection of Topsail St.	D	C	F
Marina del Rey, Mothers' Beach at playground	A	B	F
Dockweiler State Beach, 50 yards south of Ballona Creek entrance	A	A	F
Dockweiler State Beach, projection of Culver Bl	A	A	D
Dockweiler State Beach, south of D&W jetty	B	B	D
Dockweiler State Beach, 50 yards north of Imperial Hwy storm drain	A	A	C
Dockweiler State Beach, opposite Hyperion Treatment Plant	A	A	F
Dockweiler State Beach, projection of Grand Av	A	A	F

Los Angeles County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Manhattan Beach, projection of 40th St.	A+	A+	A
Manhattan Beach, projection of 27th St.	*	A	D
Manhattan Beach Pier, 50 yards south	A	A	A
Hermosa Beach, projection of 26th St.	A	A	F
Hermosa Beach Pier, 50 yards south	A	A	A
Herondo Street storm drain, 50 yards north	A	C	F
Redondo Municipal Pier, 50 yards south	B	B	D
Redondo Beach, Topaz St. jetty	A	A	F
Redondo Beach, projection of Avenue I	A	A	B
Palos Verdes Estates at Malaga Cove, daily sampling	A+	A+	A+
Palos Verdes Estates at Malaga Cove, weekly sampling	A+	A+	C
Palos Verdes (Bluff) Cove, Palos Verdes Estates	A+	A+	A
Rancho Palos Verdes at Long Point	A+	A+	A+
Rancho Palos Verdes at Abalone Cove Shoreline Park	A	A	A+
Rancho Palos Verdes at Portuguese Bend Cove	A	A	A+
San Pedro at Royal Palms State Beach	A	A	B
San Pedro at Wilder Annex	A+	A+	B
San Pedro- Cabrillo Beach, oceanside	A	A	B
San Pedro- Cabrillo Beach, harborside at lifeguard tower	C	F	F
San Pedro- Cabrillo Beach, harborside at boat launch	A	A	B
Avalon Beach, between Tuna Club and Busy Bee Restaurant	B	*	*
Avalon Beach, 2/3 distance btwn pier and Busy Bee Restaurant	B	*	*
Avalon Beach, 1/3 between pier and Busy Bee Restaurant	D	*	*
Avalon Beach, 2/3 distance between storm drain and pier	C	*	*
Avalon Beach, 1/3 distance between storm drain and pier	D	*	*
Long Beach City Beach, projection of 3rd PI	A	B	*
Long Beach City Beach, projection of 5th PI	A	B	*
Long Beach City Beach, projection of 10th PI	A	A	*
Long Beach City Beach, projection of 16th PI	A	B	*
Long Beach City Beach, projection of Molino Av.	A	B	*
Long Beach City Beach, projection of Coronado Av.	A	A	*
Long Beach City Beach, projection of 36th PI	A	B	*
Belmont Pier, west side	B	B	*
Belmont Pier, east side	B	B	*

Los Angeles County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Long Beach City Beach, projection of Prospect Av.	A	A	*
Long Beach City Beach, projection of Granada Av.	C	C	*
Long Beach City Beach, projection of 54th PI	A	A	*
Long Beach City Beach, projection of 55th PI	A	A	*
Long Beach City Beach, projection of 62nd PI	A+	A	*
Long Beach City Beach, projection of 72nd PI	A+	A	*
Alamitos Bay at 56th PI	A+	A	*
Alamitos Bay at 1st St and Bayshore Av	A	A	*
Alamitos Bay, shore float	A+	A	*
Los Cerritos Channel, Mothers' Beach	A	A	*
Alamitos Bay, 2nd St. Bridge and Bayshore Av	A+	A	*
Colorado Lagoon, north	F	D	*
Colorado Lagoon, center	A	B	*
Colorado Lagoon, south	B	C	*

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Appendix B

Orange County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Seal Beach, projection of 1st St	A	C	F
Seal Beach, projection of 8th St	A	A	F
Seal Beach, Seal Beach Pier (downcoast)	A+	A+	A+
Seal Beach, projection of 14th St	A+	A+	A+
Surfside Beach, projection of Sea Wy	A+	A+	A+
Sunset Beach, projection of Broadway	A	A	A
Bolsa Chica State Beach, south of Warner Av	A	A	B
Bolsa Chica State Beach, lifeguard building	A	A	B
Huntington City Beach, Seapoint Av bluffs	A	A	A
Huntington City Beach, projection of 17th St	A	A	B
Huntington City Beach, projection of Jack's Snack Bar	B	A	B
Huntington State Beach, project of Newland St	B	B	B
Huntington State Beach, projection of Magnolia St	C	D	F
Huntington State Beach, projection of Brookhurst St	B	B	D
Santa Ana River Mouth, north side	A	A	F
Newport Beach, projection of Orange St	A	A	F
Newport Beach, projection of 52nd/53rd St	A	A	C
Newport Beach, projection of 38th St	A	A	C
Newport Beach, Newport Beach Pier (upcoast)	A	A	F
Newport Beach, projection of 15th/16th St	A+	A	D
Balboa Beach, upcoast of Balboa Pier	A	A	B
Balboa Beach, the Wedge	A	A	A
Huntington Harbour, Mothers' Beach	A	A	F
Huntington Harbour, Trinidad Ln Beach	A	A	A
Huntington Harbour, Seagate Lagoon	A	A	A+
Huntington Harbour, Humboldt Dr Beach	B	A	A
Huntington Harbour, Davenport Dr Beach	A+	A+	F
Huntington Harbour, 11th St Beach	A	C	F
Newport Bay, north Newport Dunes	D	F	F
Newport Bay, east Newport Dunes	D	C	F
Newport Bay, south Newport Dunes	B	B	F
Newport Bay, west Newport Dunes	A	B	F
Newport Bay, Bayshore Beach	A	A	F
Newport Bay, Via Genoa Beach on Lido Isle	A	A	F

Orange County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Newport Bay, Yacht Club Beach	C	B	F
Newport Bay, Garnet Av Beach on Balboa Island	A	A	F
Newport Bay, Sapphire Av Beach on Balboa Island	A	A	F
Newport Bay, Abalone Av Beach on Balboa Island	B	A	F
Newport Bay, Park Av Beach on Balboa Island	B	B	C
Newport Bay, Onyx Av Beach on Balboa Island	B	B	F
Newport Bay, Ruby Av Beach on Balboa Island	A+	A	D
Newport Bay, Grand Canal on Balboa Island	C	B	D
Newport Bay, 43rd St Beach	F	D	F
Newport Bay, 38th St Beach	B	B	F
Newport Bay, 19th St Beach	F	D	F
Newport Bay, 15th St Beach	B	A	C
Newport Bay, 10th St Beach	A	C	F
Newport Bay, Alvarado Pl/Bay Isle Beach	B	B	F
Newport Bay, N St Beach	A	A	D
Newport Bay, Harbor Patrol Beach	C	C	F
Newport Bay, Rocky Point Beach	A	A	C
Corona del Mar Beach, 200 yard south of breakwater	A	A	A+
Corona del Mar Beach	A	A	A
Corona del Mar, Little Corona Beach at Poppy Av	A	A	F
Crystal Cove at Pelican Point	A+	A+	C
Crystal Cove at Los Trancos Canyon	A	A	A
Crystal Cove	A+	A+	D
Crystal Cove at Muddy Creek Beach	A+	A+	B
Crystal Cove at El Morro Beach	A	A	A
Emerald Bay, mid-cove	A+	A+	A+
Laguna Beach, Crescent Bay Beach	A+	A+	B
Laguna Beach, Laguna Main Beach	A+	A	D
Laguna Beach, projection of Laguna Hotel	A	A	D
Laguna Beach, projection of Bluebird Canyon	A+	A	C
Laguna Beach, Victoria Beach at Dumond Dr	A+	A	A
Laguna Beach, Blue Lagoon near Lagunita Pl	A	A	A
Laguna Beach, Treasure Island Pier	*	A+	A+
Laguna Beach, Treasure Island Sign	A	A	A+

Orange County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
South Laguna, north Aliso Creek Beach	A	A	A
South Laguna, Aliso Creek Beach	A	A	F
South Laguna, Aliso Creek Beach (beach entrance)	A+	B	F
South Laguna, south Aliso Creek Beach	A	A	D
South Laguna, Camel Point at Camel Point Dr	A+	A	A
South Laguna, Table Rock at Table Rock Dr	A+	A+	A
South Laguna, Laguna Lido Apartments	A	A	A
South Laguna, Thousand Steps Beach at 9th Av	A+	A+	A+
Three Arch Bay, mid-cove	A+	A	A+
Monarch Beach, north	A	A	F
Monarch Beach, south	C	B	B
Salt Creek Beach	A	A	C
Dana Point, Dana Strand Beach	A+	A+	A
Dana Point, Marine Institute Beach	A+	A	A+
Dana Point Harbor, Baby Beach, east end	F	F	F
Dana Point Harbor, end of guest dock at West Basin	A	A	C
Dana Point Harbor, youth dock at West Basin	B	B	C
Doheny State Beach, north beach, weekly sampling	B	C	F
Doheny State Beach, north beach, daily sampling	F	F	F
Doheny State Beach, north of San Juan Creek	D	F	F
Doheny State Beach at San Juan Creek	F	F	F
Doheny State Beach, south of San Juan Creek	F	F	F
Doheny State Beach, 1000 feet south of SOCWA	C	D	F
Doheny State Beach, 2000 feet south of SOCWA	D	F	F
Doheny State Beach, 3000 feet south of SOCWA	C	D	F
Doheny State Beach, 4000 feet south of SOCWA	B	D	F
Capistrano County Beach, 5000 feet south of SOCWA	C	C	F
Capistrano Beach, projection of Camino Estrella Beach Rd	A	B	F
Capistrano Beach, 35505 Beach Road	A	B	F
Poche Beach	F	F	C
San Clemente Beach, north beach at Avenida Pico	A	B	F
San Clemente Beach, lifeguard building, upcoast of pier	A	A	D
San Clemente State Beach, Avenida Calafia	A+	A	D
San Clemente State Beach, Avenida De Las Palmeras	A+	A	F

Orange County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Dana Point Harbor, Baby Beach, west end	F	F	F
Dana Point Harbor, Baby Beach, buoy line	C	F	F
Dana Point Harbor, Baby Beach, swim area	B	D	F

**Health Department only monitors during AB411 (April through October) and/or not enough wet weather samples to determine a wet weather grade.*

Appendix B

San Diego County	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
San Onofre State Beach at San Mateo Creek	A+	A+	*
San Onofre State Beach, Old Man's	F	D	*
Camp Pendleton, Camp del Mar	A+	A+	*
Oceanside Beach, Harbor Beach, projection of Harbor Dr	A+	A+	*
Oceanside Beach at San Luis Rey River	A	A	*
Oceanside Beach, projection of Surfrider Wy	A	A	*
Oceanside Beach, projection of Pier View Wy	B	B	*
Oceanside Beach, projection of Wisconsin St	A+	A+	*
Oceanside Beach, projection of Tyson St	A	A	*
Oceanside Beach, projection of Forester St	A+	A+	*
Oceanside Beach, 500 feet north of Loma Alta Creek	A+	A+	*
Oceanside Beach, Buccaneer Beach at Loma Alta Creek	A	A	*
Oceanside Beach, projection of Cassidy St	A+	A	*
Oceanside Beach, Saint Malo Beach	A+	A+	*
Oceanside Beach, Buena Vista Lagoon	A	A	*
Carlsbad, projection of Carlsbad Village Dr	A+	A+	*
Carlsbad State Beach, projection of Tamarack Av	A+	A+	*
Carlsbad State Beach, warm water jetty, adjacent to power plant	A	A	*
South Carlsbad State Beach, projection of Cerezo Dr	A+	A+	A+
South Carlsbad State Beach, projection of Palomar Airport Rd	A+	A+	A+
South Carlsbad State Beach at Encina Creek	A+	A+	A+
South Carlsbad State Beach, projection of Ponto Drive	A+	A+	A+
South Carlsbad State Beach, projection of Poinsettia Lane	A+	A	A+
South Carlsbad State Beach at Batiquitos Lagoon	A+	A+	*
Leucadia, projection of Grandview St.	A+	A+	*
Encinitas, Moonlight Beach at Cottonwood Creek outlet	D	D	*
Encinitas, Swami's Beach	A+	A+	*
Encinitas, San Elijo State Park, proj. Liverpool Dr.	A	A	A
Cardiff State Beach, San Elijo Lagoon	A	B	B
Cardiff State Beach, Charthouse parking lot	A	A	A+
Cardiff State Beach at Las Olas	A	A	A
Cardiff State Beach, Seaside State Park	A+	A+	A+
Solana Beach, Tide Beach Park, projection of Solana Vista Dr.	A	A	A+
Solana Beach, Fletcher Cove, projection of Lomas Santa Fe Dr.	A+	A+	F

San Diego County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Solana Beach, Seascapes Surf Beach Park	A+	A+	*
Del Mar City Beach at San Dieguito River	A+	A+	*
Del Mar City Beach, projection of 15th St	A+	A+	*
Del Mar City Beach, projection of 12th St	A+	A+	*
Torrey Pines State Beach at Los Penasquitos Lagoon	A	A	*
La Jolla Shores, south side of Scripps Pier	A	A	*
La Jolla Shores, projection of Avenida De La Playa	A	A	*
La Jolla Cove	A	A	*
La Jolla, South Casa Beach	A+	A+	*
La Jolla, Whispering Sands Beach	A+	A	*
La Jolla, Horseshoes	A	A	*
La Jolla, Windansea Beach	A+	A+	*
Pacific Beach Point	F	F	*
Pacific Beach, Tourmaline Surf Park	A+	A+	*
Pacific Beach, Crystal Pier	A+	A+	*
Pacific Beach, projection of Grand Av	A+	A	*
Mission Beach, projection of Capistrano Pl	A+	A+	*
Mission Bay, Mariners Basin at Balboa Ct	A+	A+	*
Mission Bay, Bonita Cove, north cove	C	C	*
Mission Bay, Bahia Point, north side	C	C	*
Mission Bay, Bahia Point, swim area	A	A	*
Mission Bay, Santa Barbara Cove	C	C	*
Mission Bay, Santa Barbara Cove, swim area	A+	A+	*
Mission Bay, San Juan Cove, west of boat launch	A+	A+	*
Mission Bay, Santa Clara Cove	A	A	*
Mission Bay, Fanuel Street Park	B	B	*
Mission Bay, La Cima Dr at Riviera Shores	C	C	*
Mission Bay, La Cima Beach	A	A	*
Mission Bay, Crown Point Shores	A	A	*
Mission Bay, Crown Point Shores, watercraft area	A	A	*
Mission Bay, Northern Wildlife Refuge	B	B	*
Mission Bay, swim area adjacent to Northern Wildlife Refuge	A	A	*
Mission Bay, Campland on the Bay	F	F	*
Mission Bay, DeAnza Cove, swim area	A+	A+	*

San Diego County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Mission Bay, DeAnza Cove (mid-cove)	F	F	*
Mission Bay, Visitor's Center, projection of Clairemont Dr.	D	F	*
Mission Bay, swim area at Visitor's Center	A+	F	*
Mission Bay, Leisure Lagoon	A	A	*
Mission Bay, swim area at Leisure Lagoon	A+	A+	*
Mission Bay, Pacific Passage	C	B	*
Mission Bay, Tecolote Shores	B	B	*
Mission Bay, Tecolote Creek outlet	F	F	*
Mission Bay, Perez Cove	A+	A+	*
Mission Bay, Quivera Basin at Lifeguard station	A+	A+	*
Mission Bay, Fiesta Island Bridge (south side)	A	A	*
Mission Bay, Hidden Anchorage	F	F	*
Mission Bay, Vacation Isle at South Cove	A+	A+	*
Ocean Beach at San Diego River	F	D	*
Ocean Beach Pier	A+	A+	*
Ocean Beach, projection of Bermuda Av	A+	A+	*
Sunset Cliffs, North Garbage Reef	A	A	*
Sunset Cliffs, Newbreak Beach	A+	A+	*
Point Loma Treatment Plant	A+	A+	*
Point Loma Lighthouse	A+	A+	*
San Diego Bay, north of Kellogg St	B	B	*
San Diego Bay, Shelter Island, projection of Bessemer St.	A	A	*
San Diego Bay, Shelter Island at Shoreline Park Beach	F	F	*
San Diego Bay, Spanish Landing Park beach	B	B	*
San Diego Bay, Bayside Park	C	D	*
San Diego Bay, Silver Strand, cove north of Crown Isle	A+	A+	*
San Diego Bay, Glorietta Bay Park at boat launch	A	A	*
San Diego Bay, Tidelands Park, projection of Mullinix Dr.	C	C	*
Coronado Municipal Beach, North Beach	A	A	D
Coronado Municipal Beach, NASNI Beach	*	A+	*
Coronado Municipal Beach, projection of Loma Av	A+	A	A+
Coronado Municipal Beach, projection of Avenida del Sol	A	A	B
Coronado Municipal Beach, Silver Strand	A	A	A+
Imperial Beach, north end	B	B	D

San Diego County (continued)	Dry (04/01-10/01)	Dry (04/01-03/02)	Wet (04/01-03/02)
Imperial Beach, projection of Palm Av	A+	A+	*
Imperial Beach Pier, north side	A	A	*
Imperial Beach, projection of Cortez Av	A+	A+	*
Imperial Beach, south end	A	A	F
Tijuana Slough NWR at 3/4 mile north of Tijuana River	A	A	F
Tijuana Slough NWR at Tijuana River	C	B	F
Border Field State Park, projection of Monument Rd	B	B	F
Border Field State Park, north side of border fence	C	C	F

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